SHOUT RF02 082915 – Erika
Mission Summary

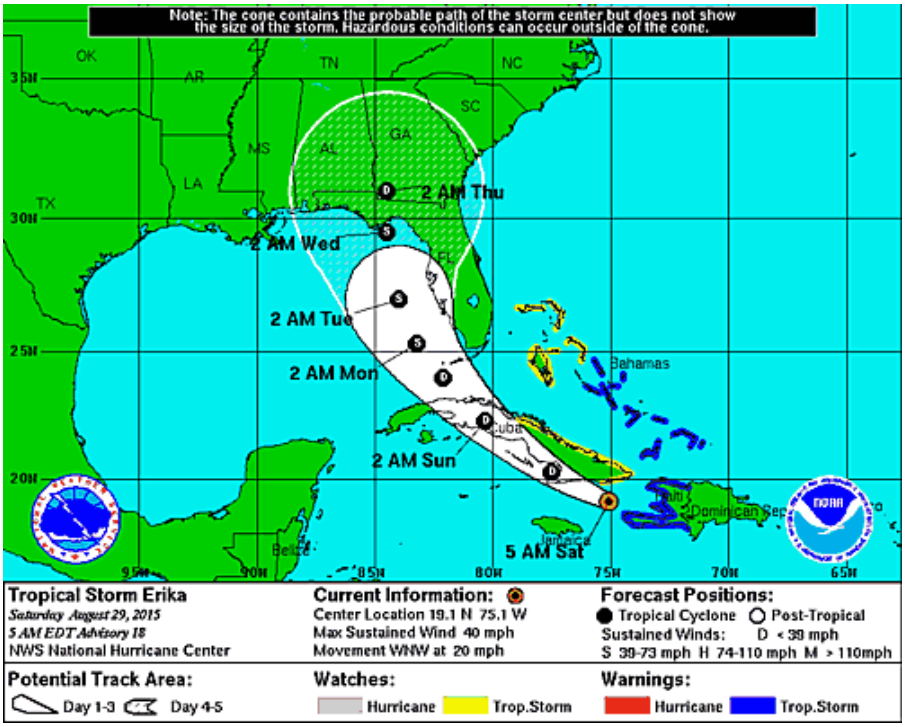
First shift Mission Scientists: Jason Dunion, Paul Newman, Gary Wick
Second shift Mission Scientists: Michael Black, Natalie Laudier, and Pete Black
Third shift Mission Scientists: Anthony Didlake, Sarah Griffin, John Walker

Second SHOUT Research Flight and second mission to study T/S Erika. Was extensive discussion of whether to proceed with flight given state of Erika, its forecast path along Cuba, and its prospects for further intensification. Opted to go ahead with mission given the possibility of the system of posing a future threat to US Coast and the opportunity to test out instrument repairs conducted over the past two days.

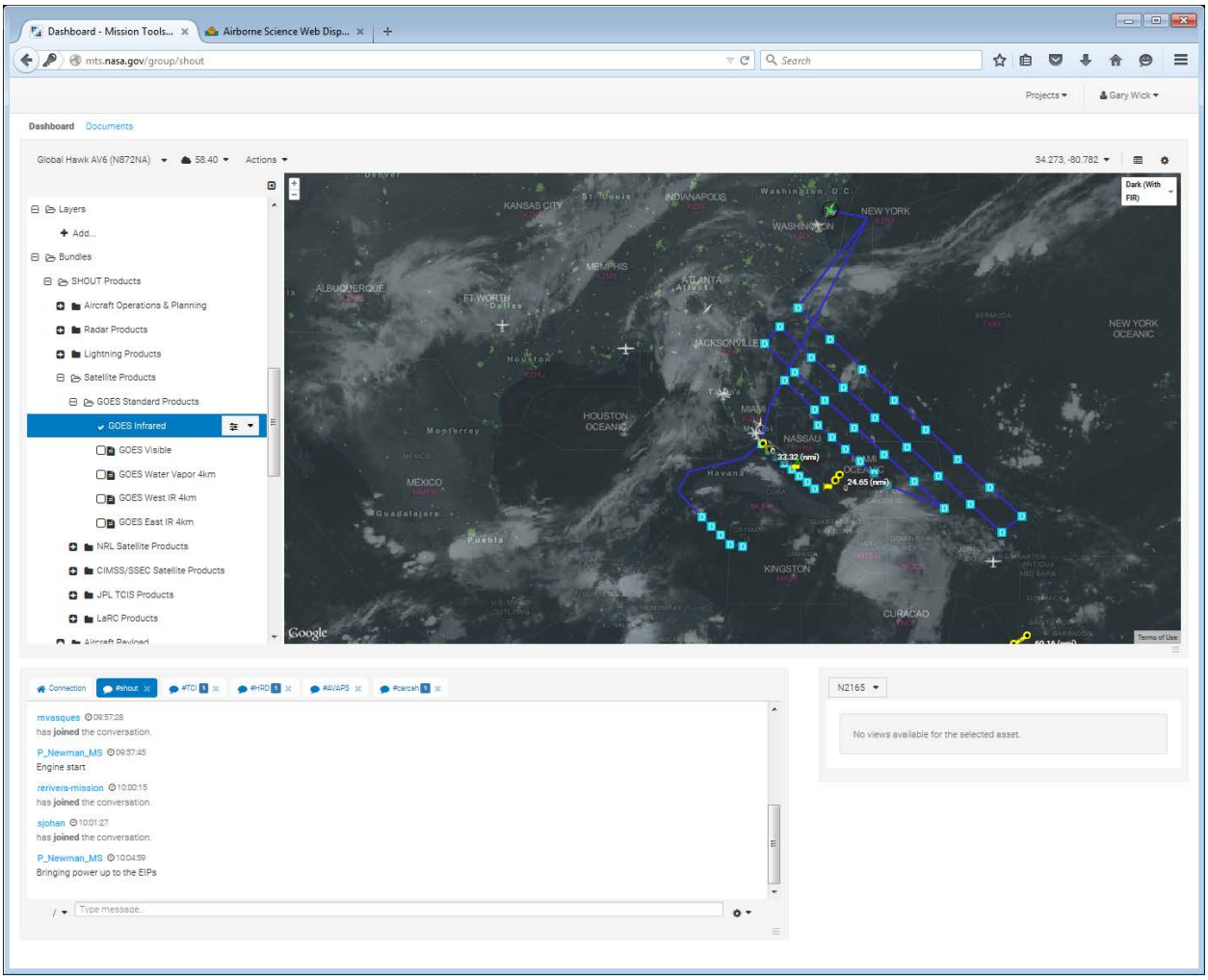
Mission plan begins with a lawnmower to sample the environment and then includes several race track loops south of the Bahamas. The filed plan also included a loop south of Cuba to preserve the option of flying in that region. The understanding was that it was an either/or with regards to the race tracks near the Bahamas or the sampling south of Cuba.

We have requested the possibility of also sampling in the northeastern Gulf of Mexico based on forecast sensitivity runs, but since this flight represents a one-day slip, the box filed did not include the area west of Florida. Discussed with Tom during T-0 meeting and he was going to consider.

Forecast track at mission start



Full filed flight track with IR background

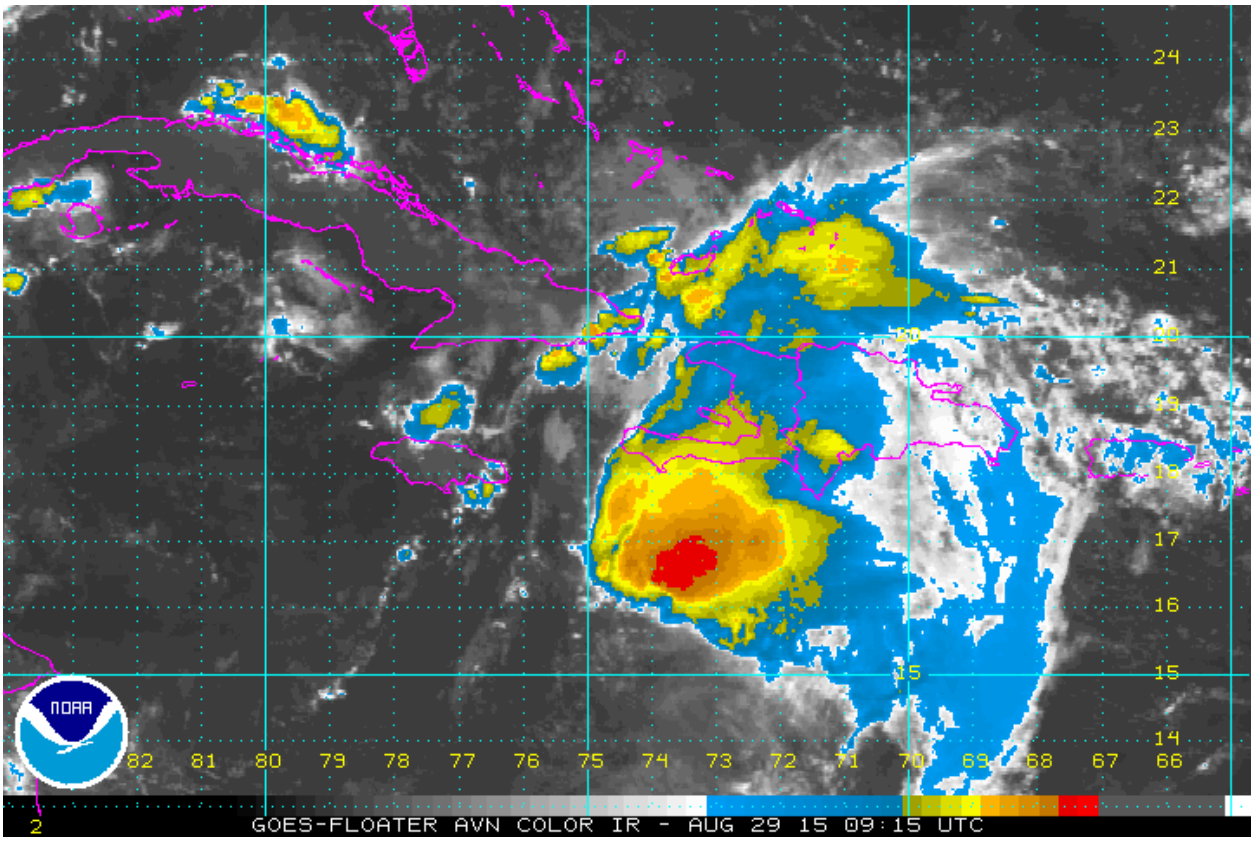


0958 Engine start

1021 Pin pulled.

1040 Ku at Armstrong failed, so switched to WFF Ku. Using Telstar14R (Atlantic) satellite (different than briefed) - should cover the current planned route

1059 Takeoff.



0957Z Engine Start

1005 Instruments coming up

1021 Pin pull

Issues with bringing up Ku on SatMex satellite. Required use of dish at AFRC but dish not currently enabled there. Armstrong dish not transmitting so will switch back to dish here and the Atlantic satellite. Projected 20 min period to reconfigure

1040Z Ku up

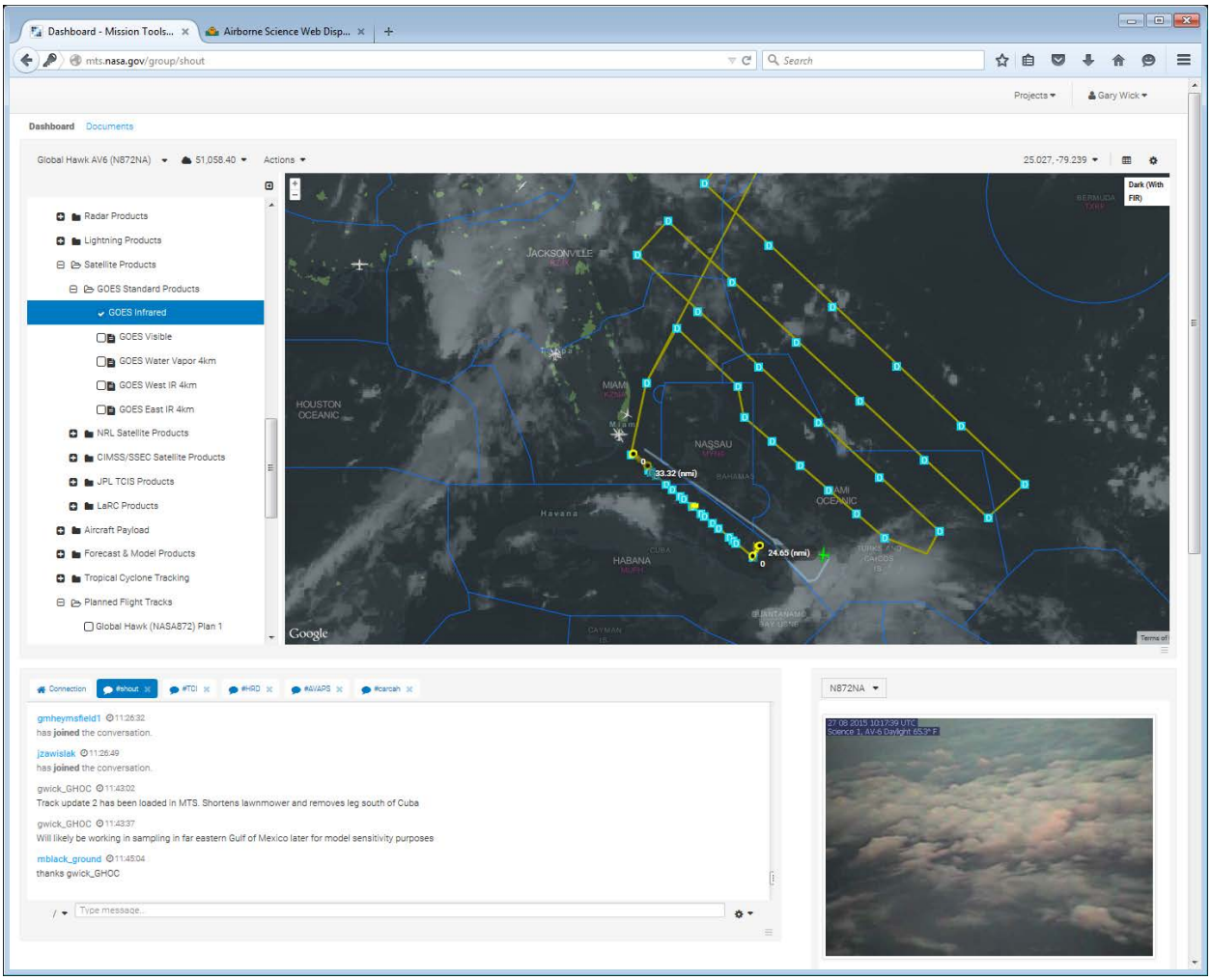
1055 Taxi

1059Z Takeoff

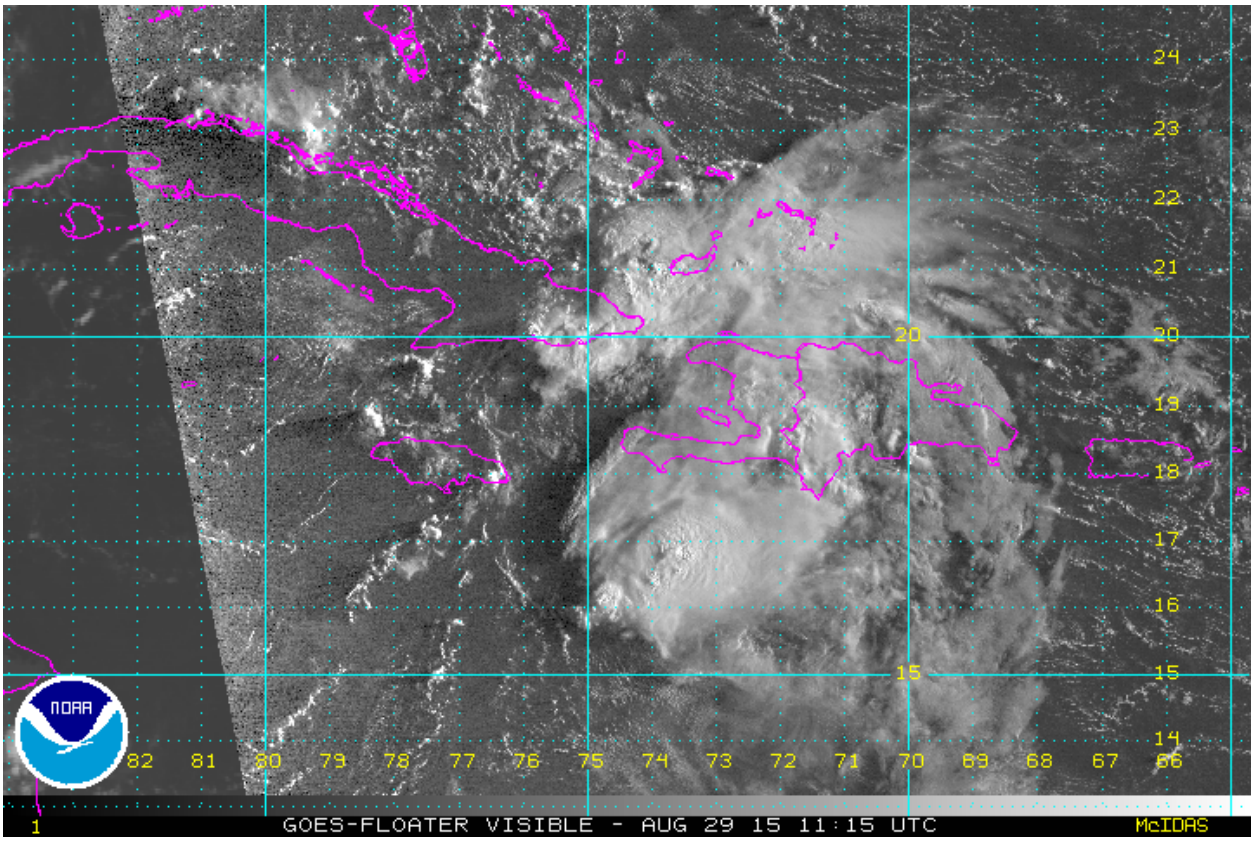
Had discussion with Tom about potential to get into the Gulf. His issues was with Houston airspace since they had not even been notified of our flight (issue again was the fact that the flight slipped a day and we were working with the box submitted for the day before. Would be

ok to do the eastern part of the gulf in Miami oceanic and JAX FIR's. Jason is working up a plan that drops in those regions only

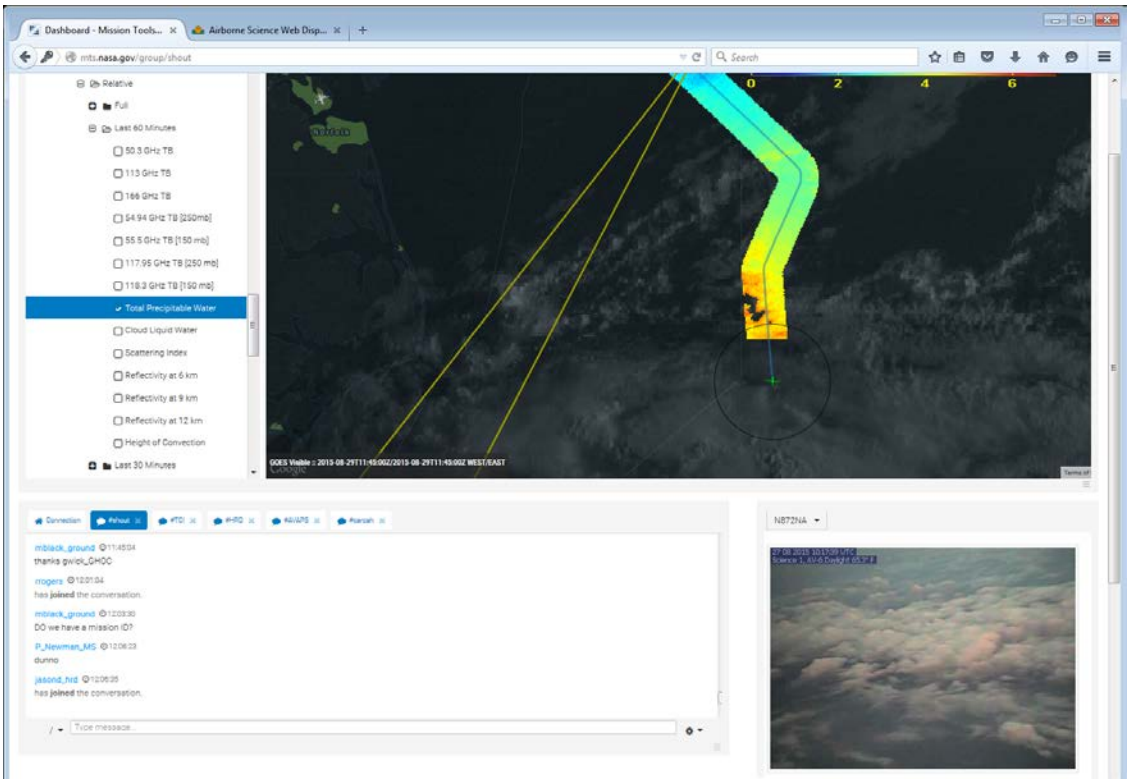
1141Z HAMSR (Boon) reports their processor almost caught up - their data should be current in ~5 minutes. HIWRAP also says looking good



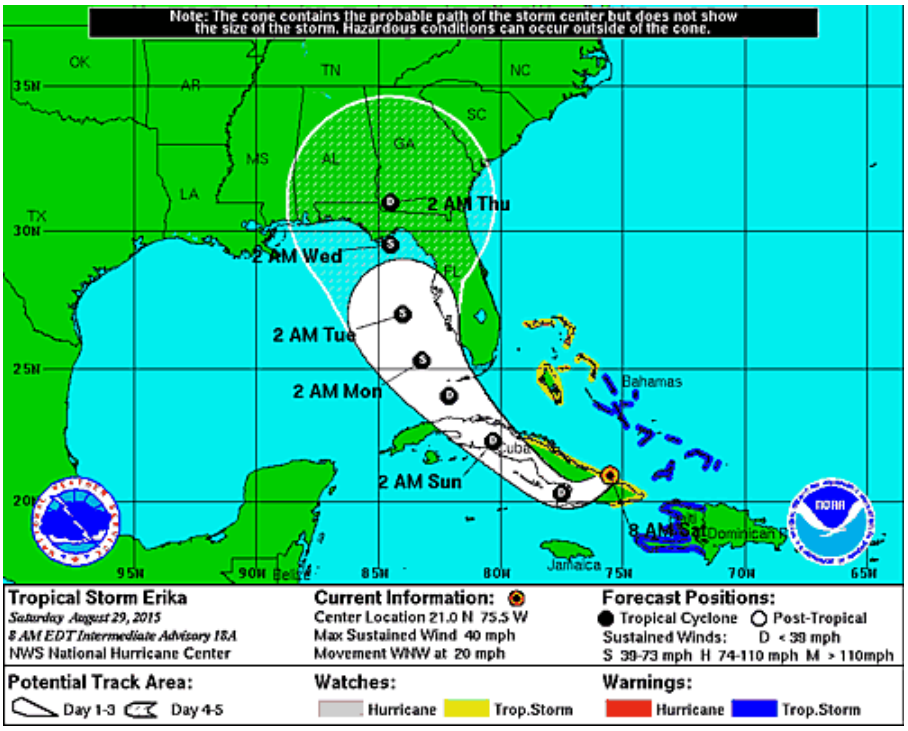
12Z screen grabs



1208Z seeing HAMSR TPW increase as approach convection (60 min TPW product)

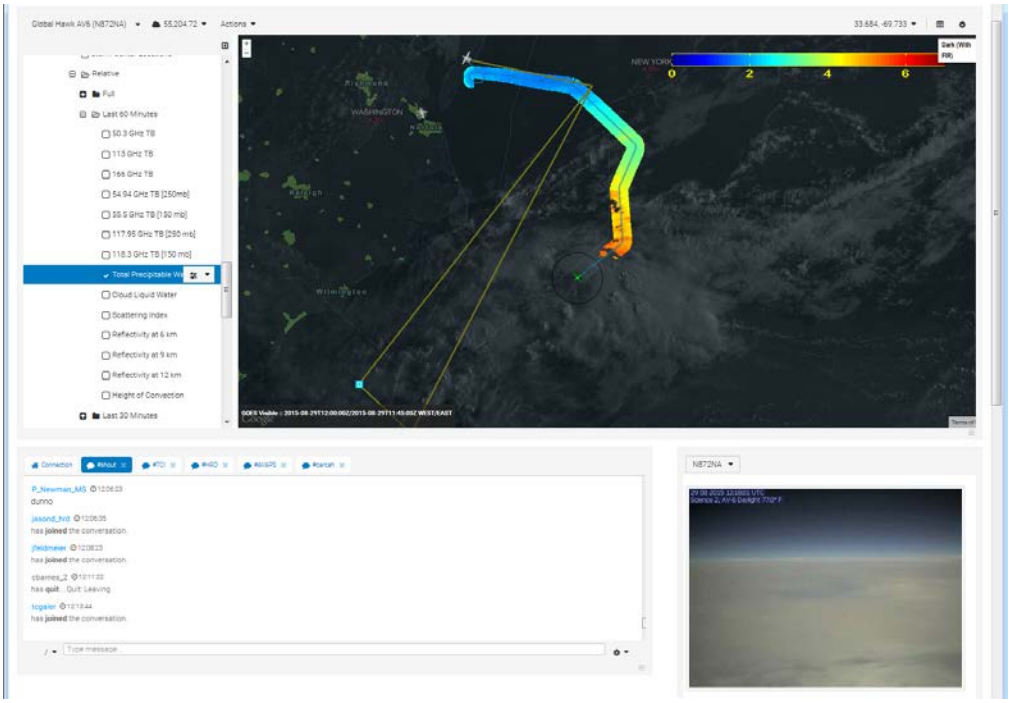


1210 Z New track forecast from NHC:



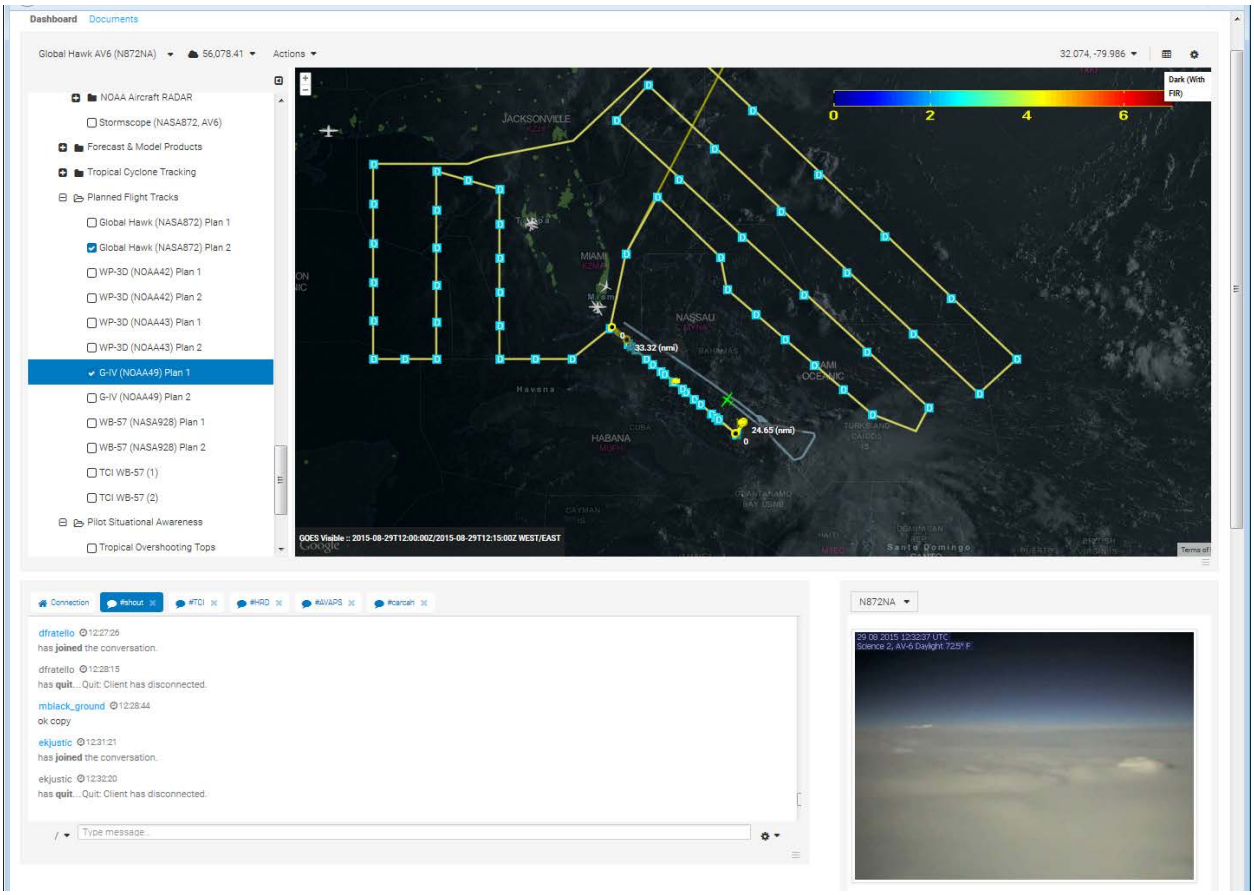
1210 Z: Tom Miller came back and reported that they are good to do the full 3 legs in the Gulf of Mexico as originally desired - Ok to enter Houston FIR and drop. Great News!

1218Z More HAMSR:



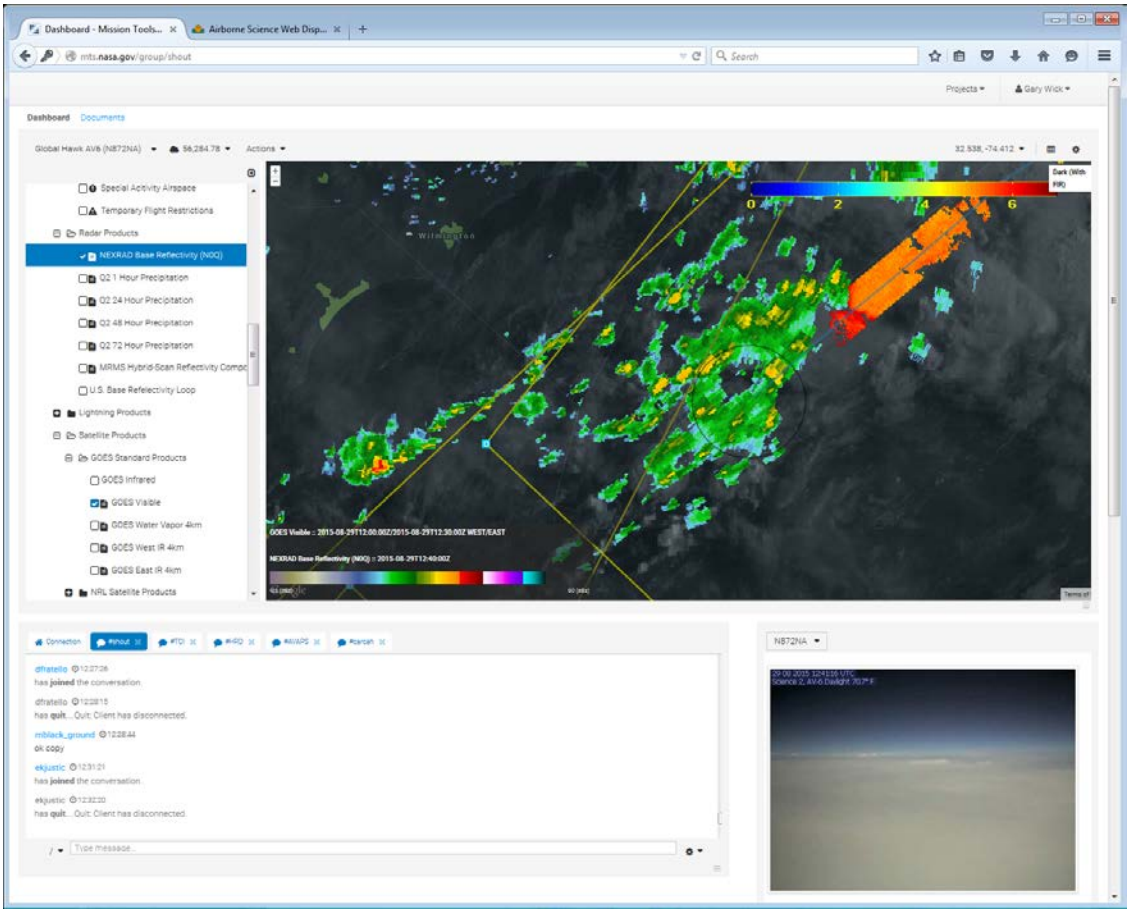
1220Z: Mission reports that first planned drop will be in air traffic corridor. Asked if possible to drop at an earlier time. Pilots still working previous track change - will get back to us

1232Z: Following graphic shows Gulf path to be added:

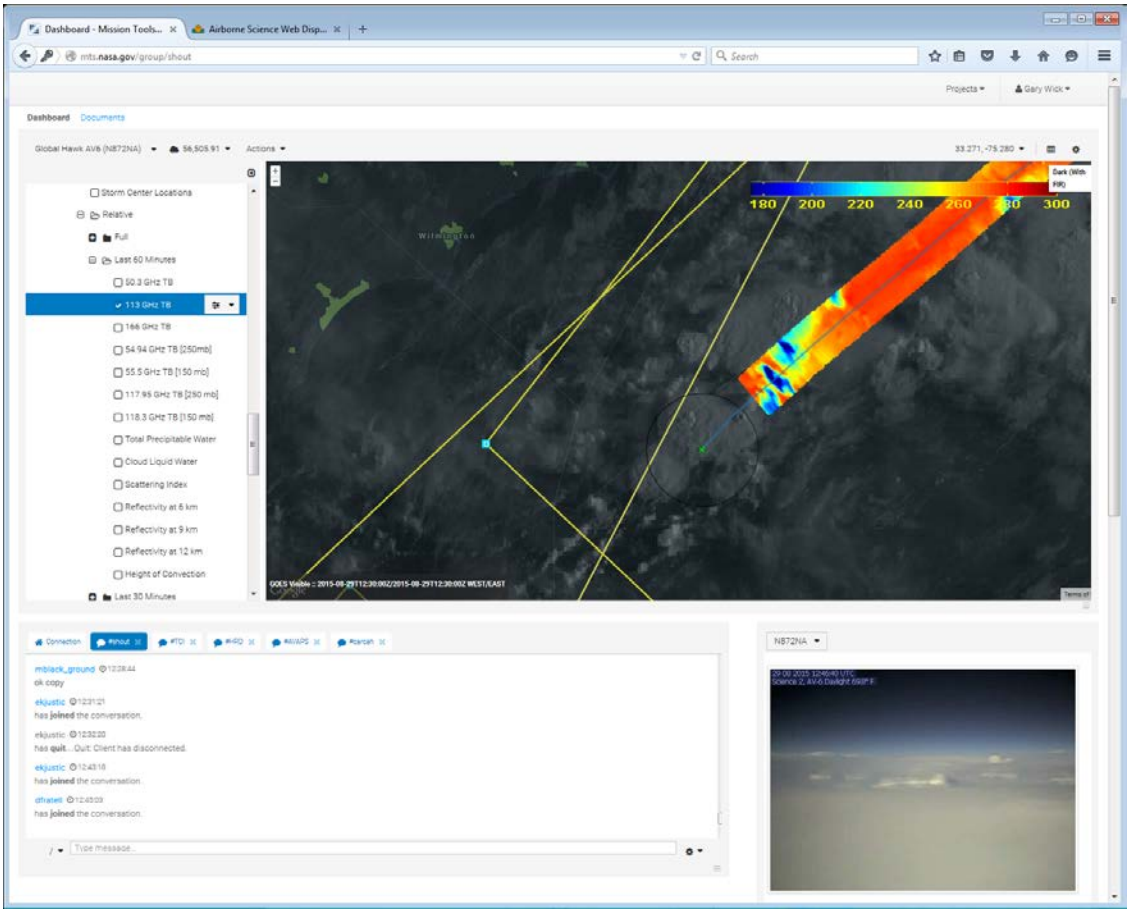


1238 Z HIWRAP seeing nice image on their laptop - will share screen grab: Corresponding daylight image below

1242Z Passing some radar echoes now (below):



1245Z Daylight camera below

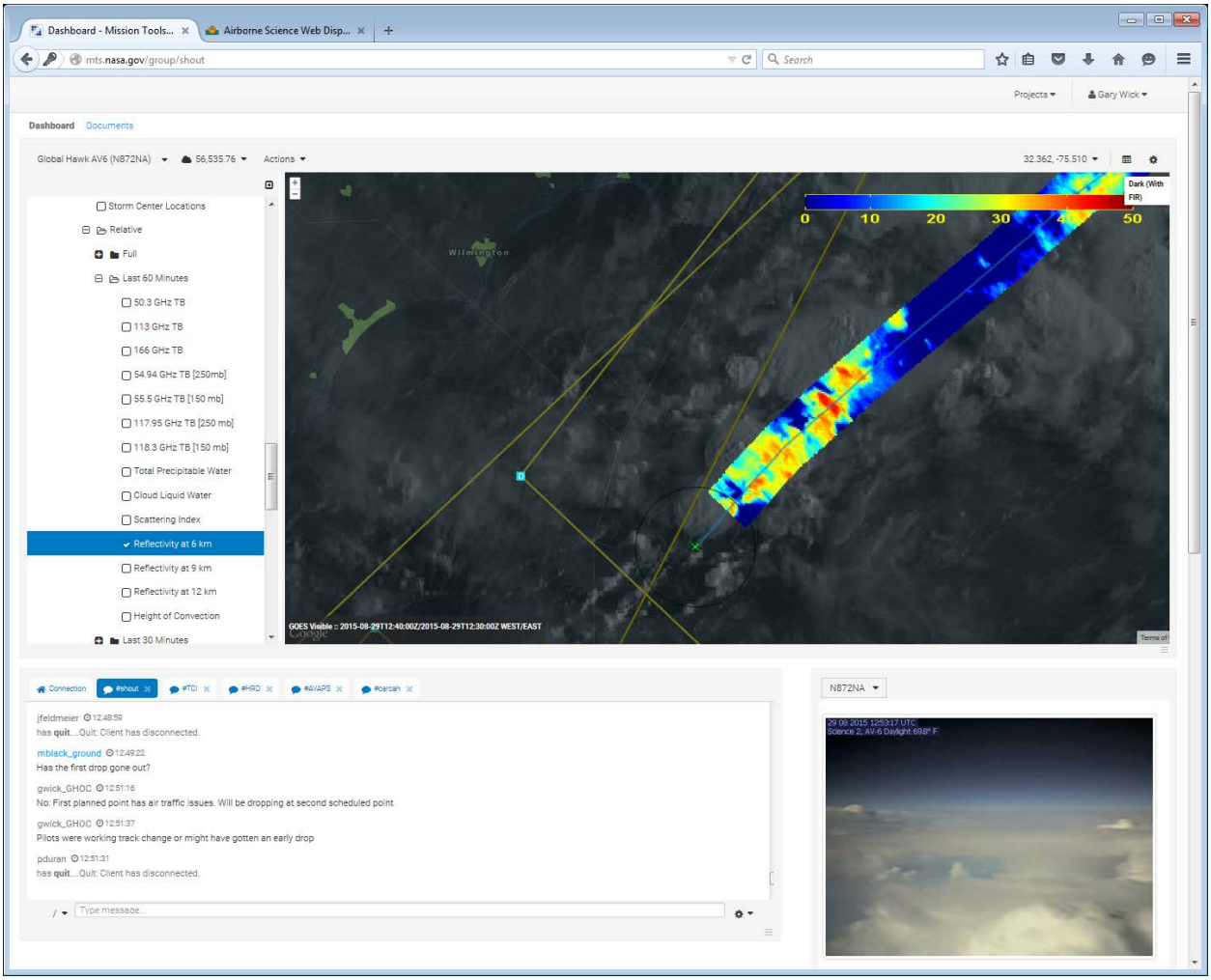


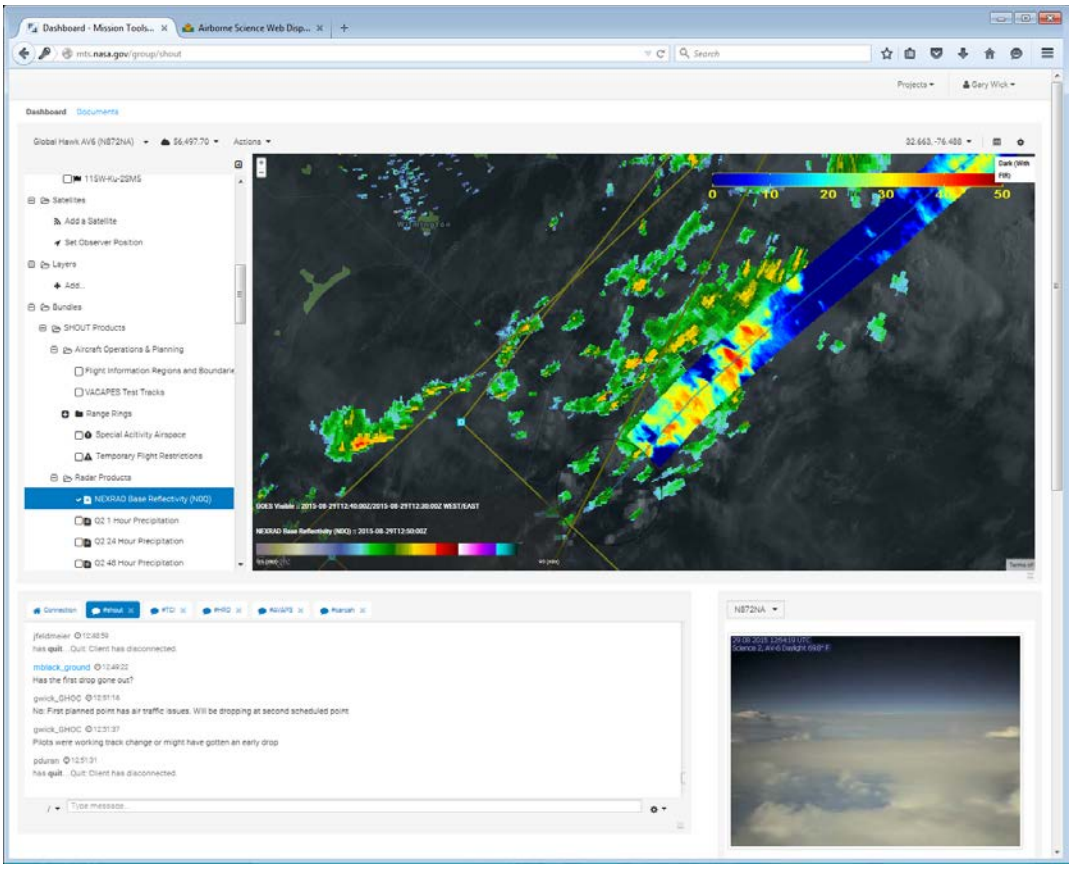
above is HAMSR 113 GHz: Note correspondence to echo cells from before

1248Z daylight shot below

1250Z HIWRAP reporting that they are getting regular 15 minute updates on a web page: http://meso-a.gsfc.nasa.gov/912/radar/storm/SHOUT/HIWRAP_KML/HIWRAP_RealTimeVerticalPlot.png

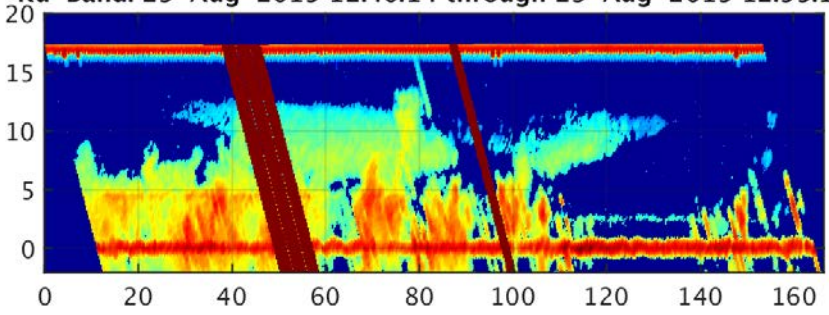
1253Z HAMSR reflectivity. Good correspondence with radar



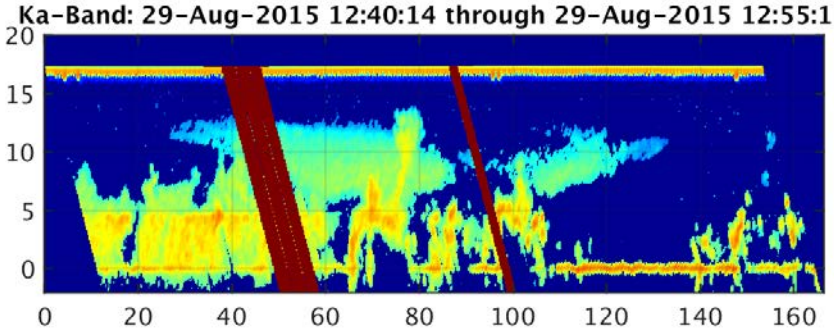


From HIWRAP site:

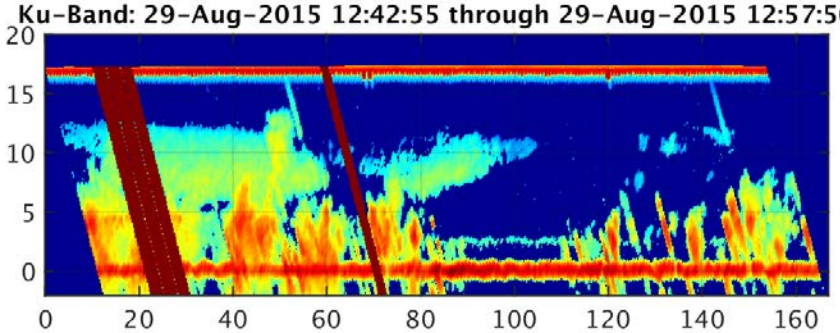
Ku-Band: 29-Aug-2015 12:40:14 through 29-Aug-2015 12:55:11



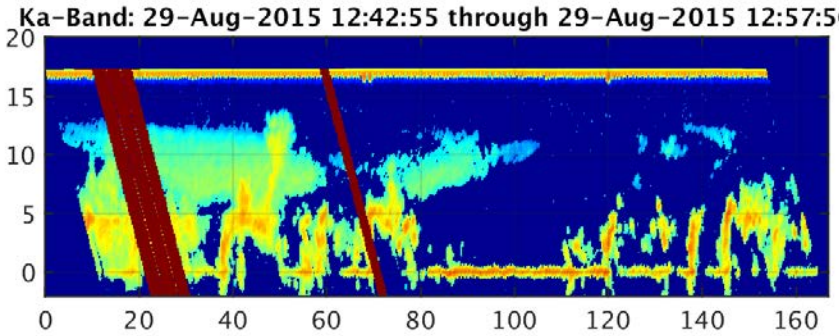
Ka-Band: 29-Aug-2015 12:40:14 through 29-Aug-2015 12:55:11

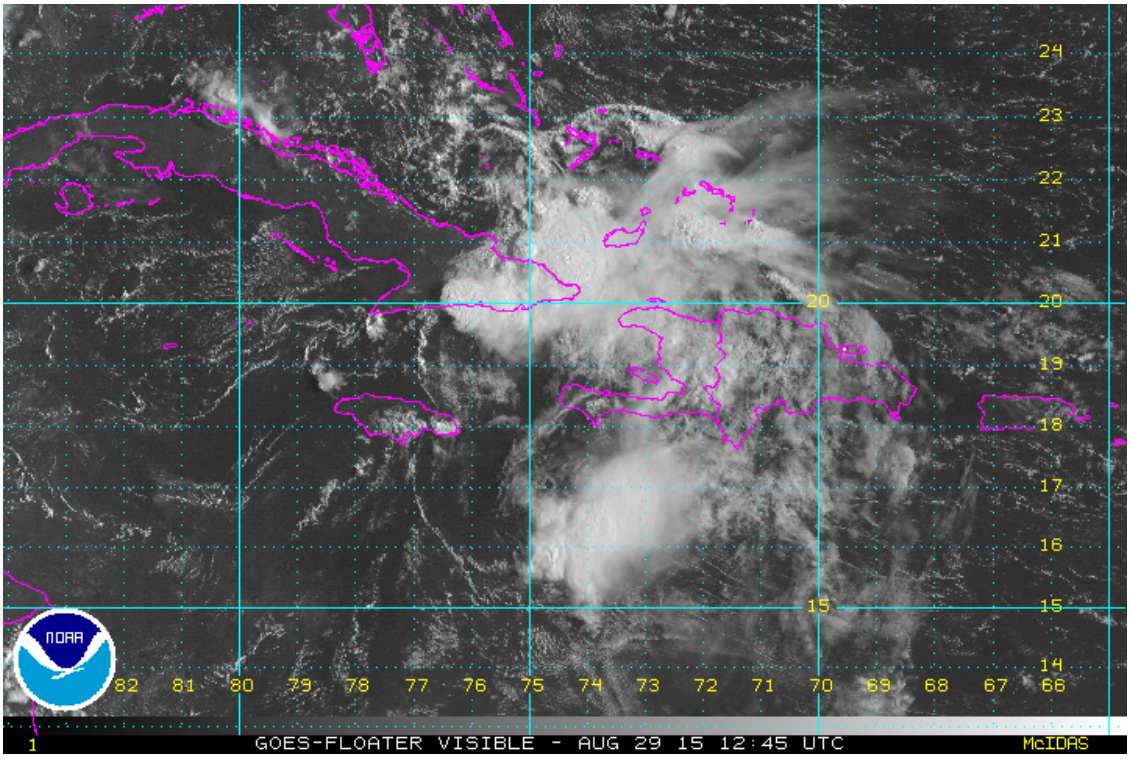


Ku-Band: 29-Aug-2015 12:42:55 through 29-Aug-2015 12:57:56



Ka-Band: 29-Aug-2015 12:42:55 through 29-Aug-2015 12:57:56

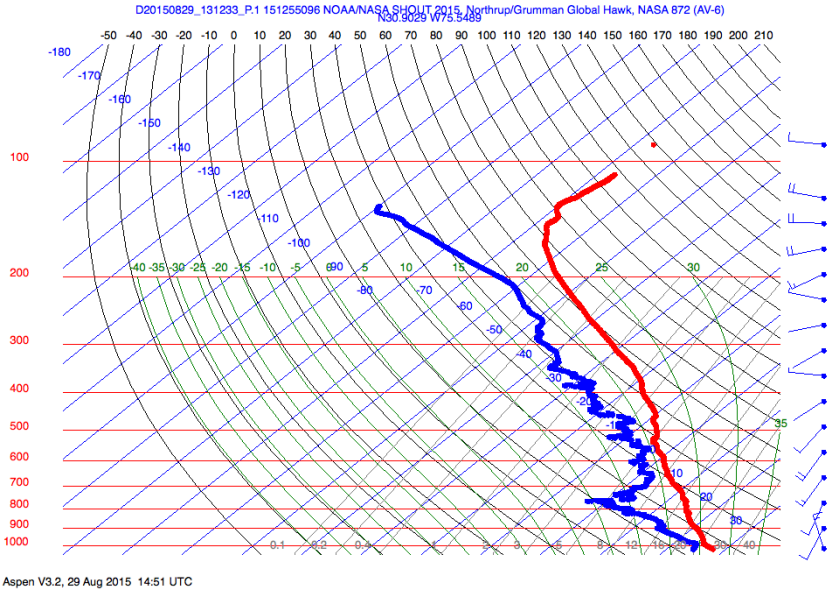




1300 Turned onto 1st lawnmower leg. Flying to the SE

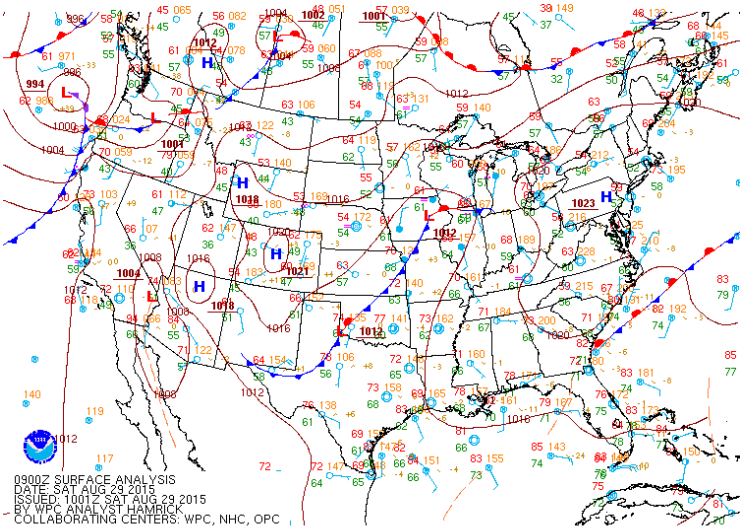
1308Z AVAPS loading first sonde - successfully loaded

1312Z Drop 1 at scheduled location 2. Good release and data return (skipped location 1 due to air traffic)

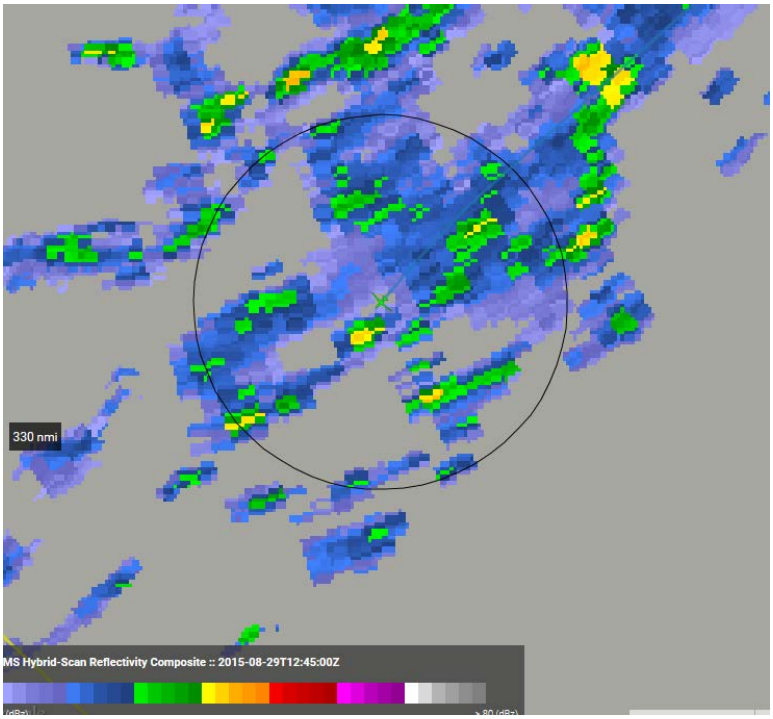


Tom came back to warn that last two lines of the lawnmower pattern have good deal of air traffic - may be difficult to perform drops in those regions.

1315 Overflew a stationary front while in transit from WFF to 1st lawnmower leg. See below in surface anallysis off of N. Carolina.



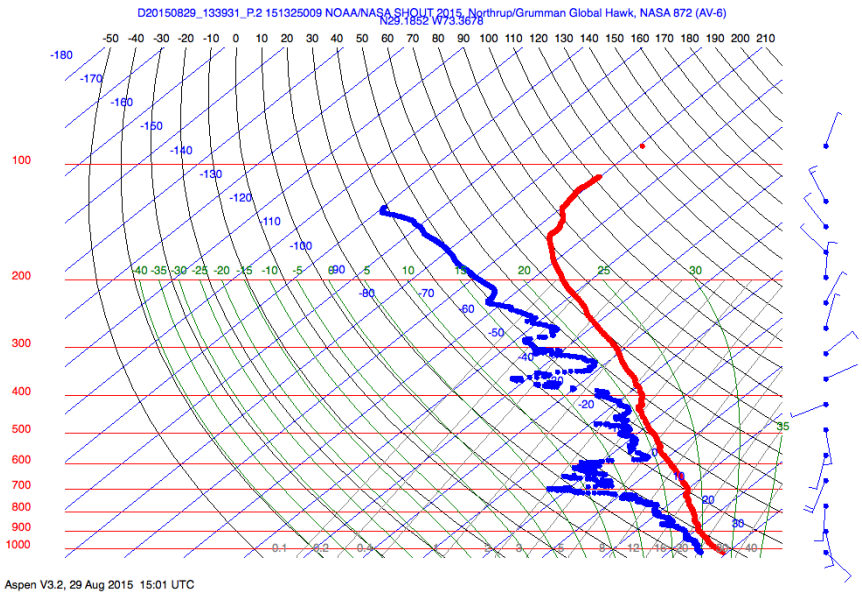
Both HAMSR and HIWRAP got good data over these systems & a nice cell appeared in the nose camera. In the MS hybrid scan reflectivity, you can see a nice cell a few nm from the GH nose. The vis image shows this cell quite nicely.



Boon from JPL e-mailed sequence of images he collected during same period

1335Z Sonde 2 loaded

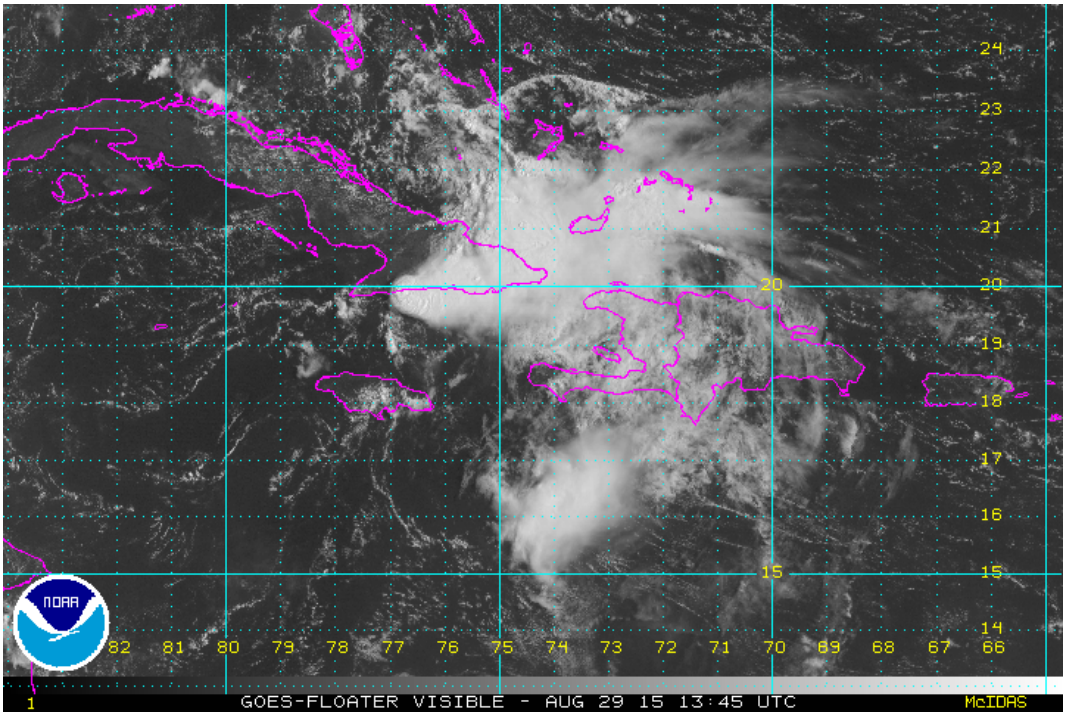
1338Z Sonde 2 released, drop location 3 - good drop



1350Z LIP team reports that they are not seeing data from their forward up-looking field mill on the engine nacelle. They believe the problem is related to the RICO (sp?) box located in zone 61, but will need to run some tests to isolate between the box and the mill itself. A change of the box would require maybe a half hour or so by their estimates. A change of the field mill would require more time and could not be done if trying to fly again the next day. They say the system would be ok to fly again - this mill is largely redundant and is the “best” to fail - but would like to repair as soon as practical. Will need to schedule time for them during next available period.

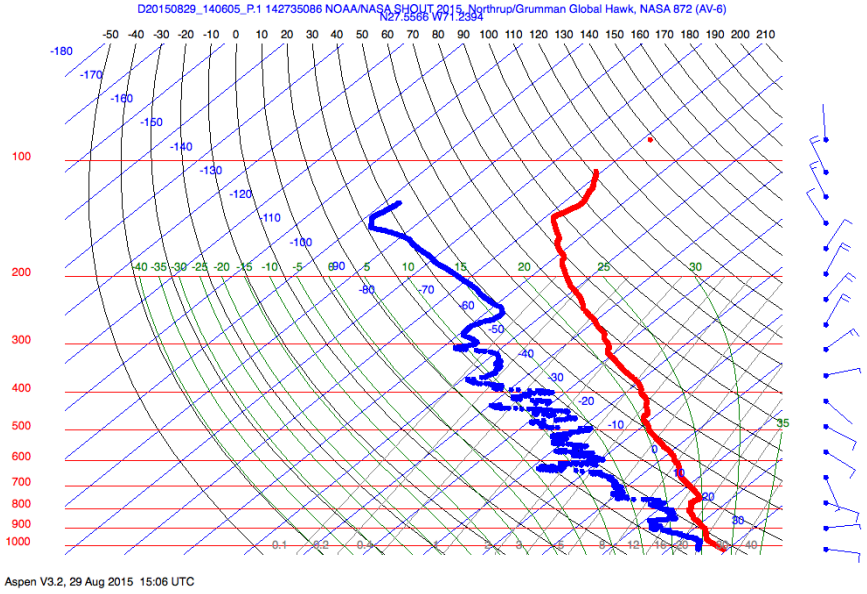
1354Z Saw raw data from first sonde on the ground - ftp’d through

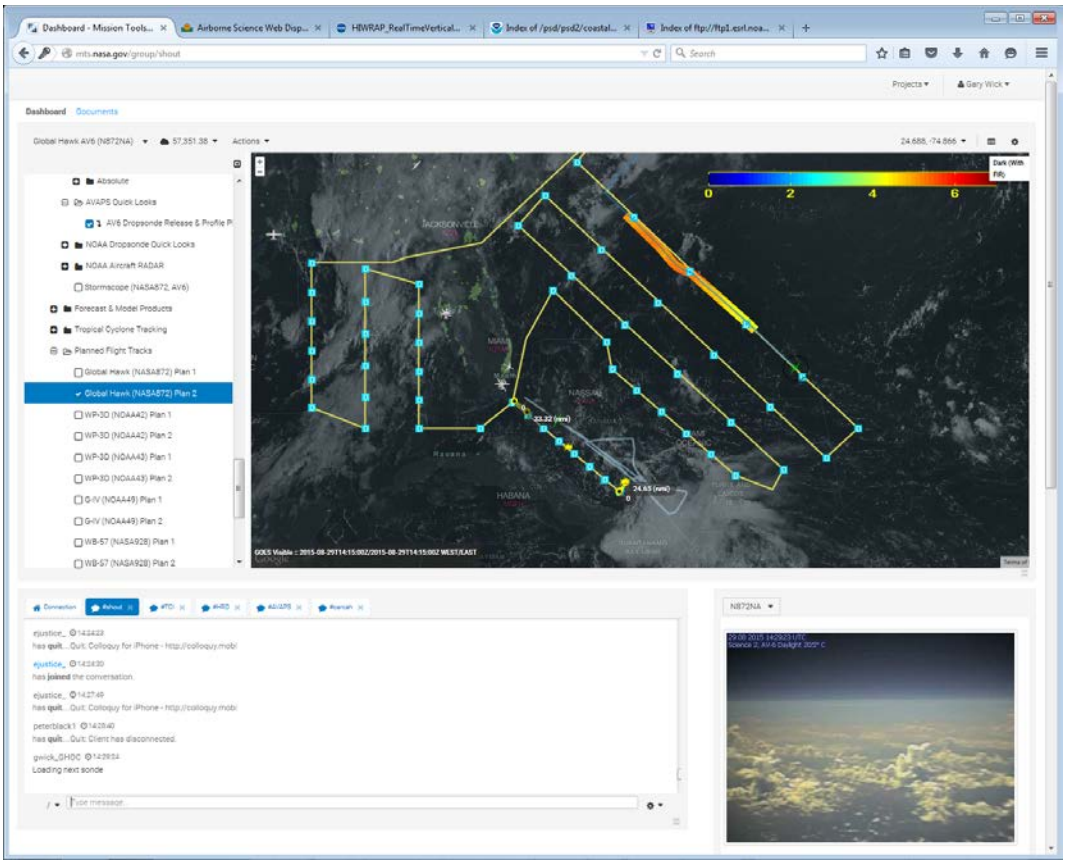
1358Z Seeing that NHC has declared Erika a remnant. (Tropical Depression Erika dissipated at 9:30 am EDT). Pressing on…



1401Z Next sonde loaded

1406Z Drop 3 at location 4 - Good release

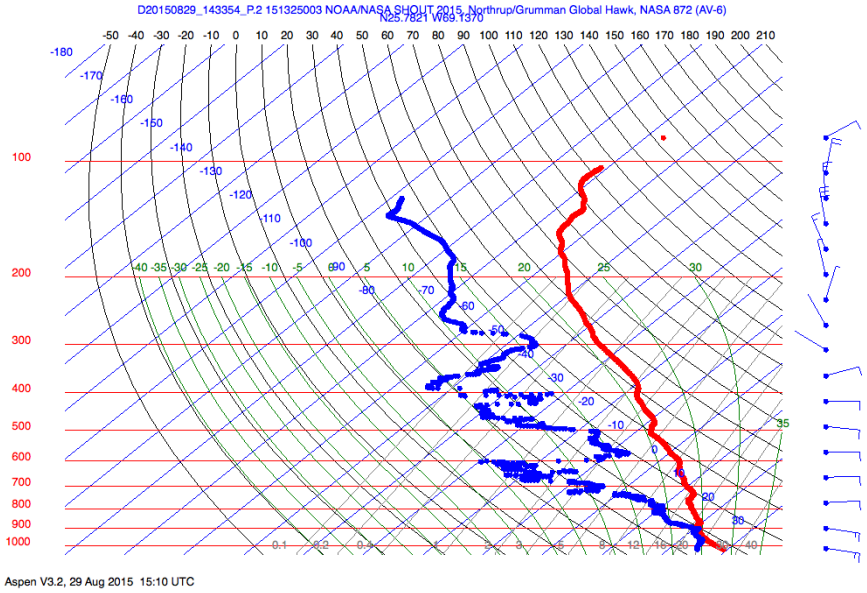




1429Z Loading sonde 4

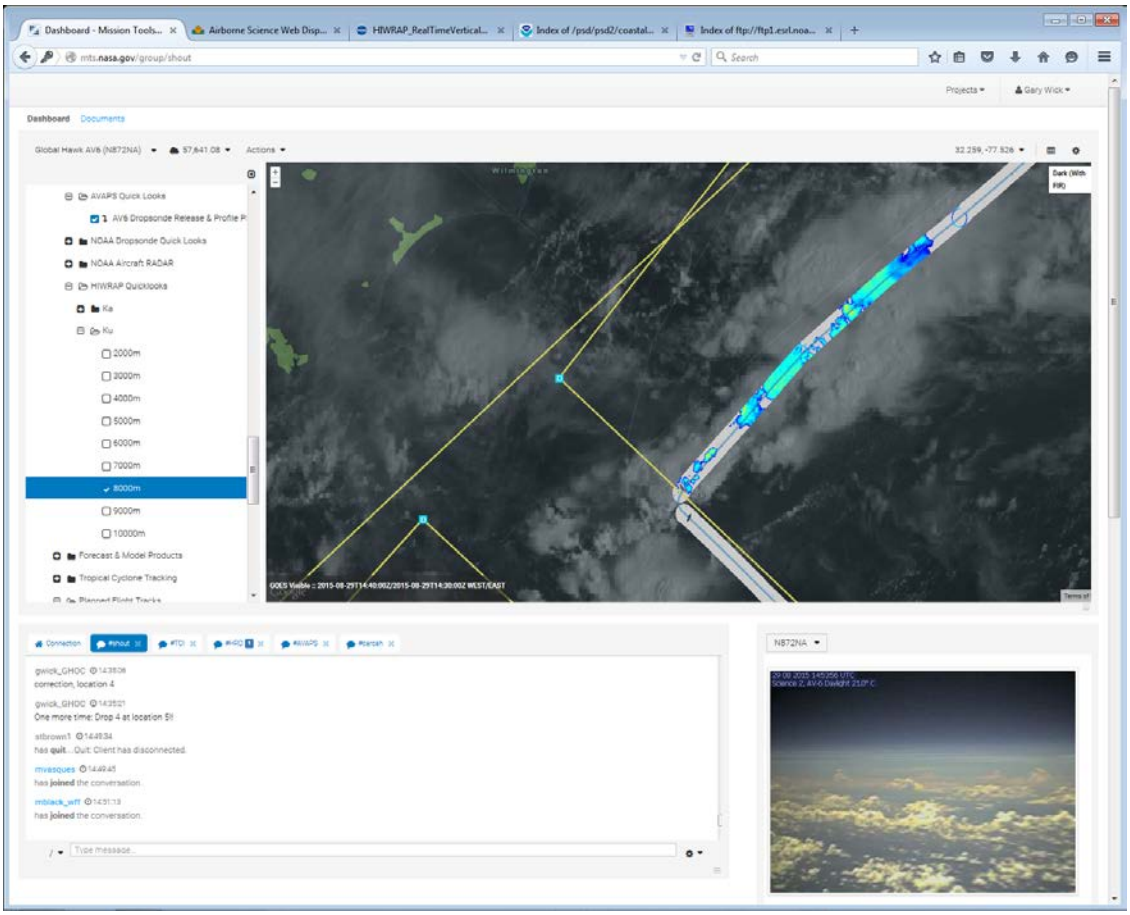
Raw data from third sonde is on ground

1433Z Drop 4 at location 5 - good release

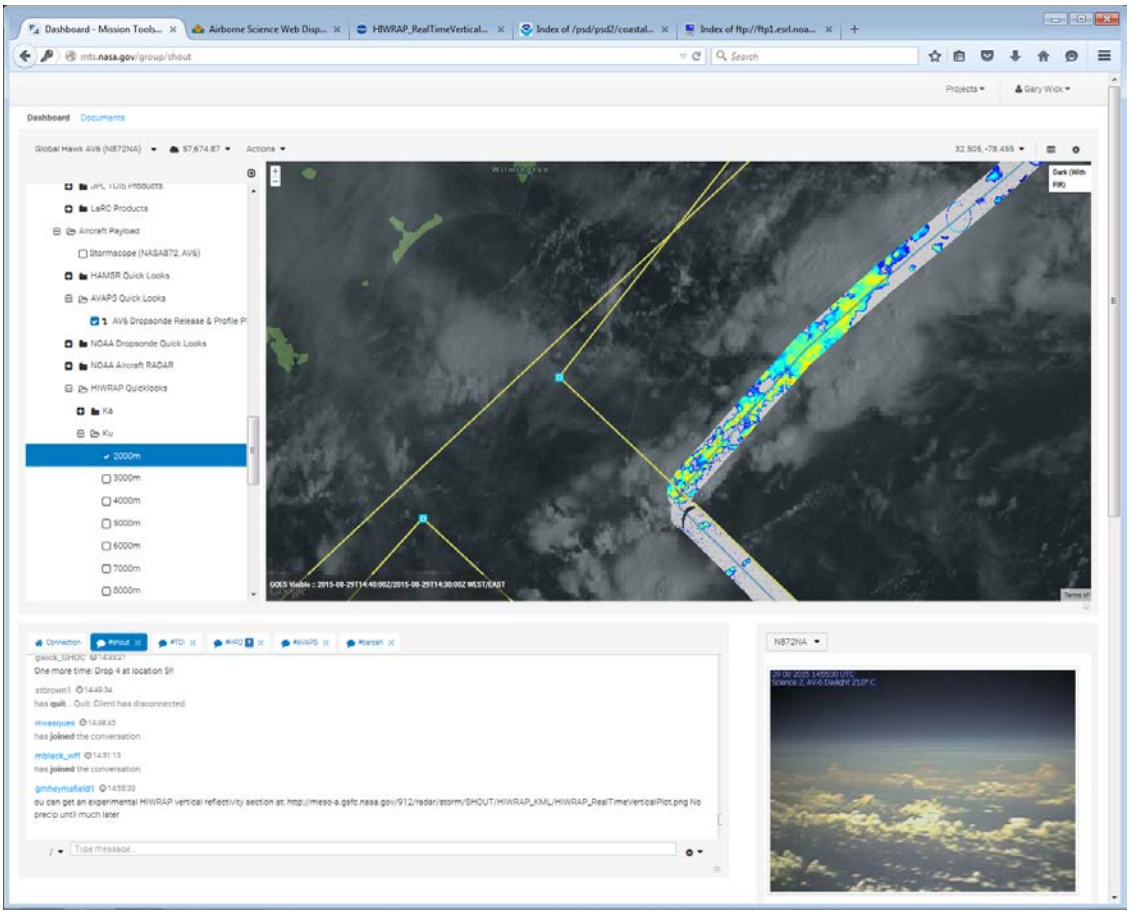


1453Z HIWRAP notes that they have products up and available on MTS. Select aircraft payload -> HIWRAP Quicklooks -> Ku/Ka and level

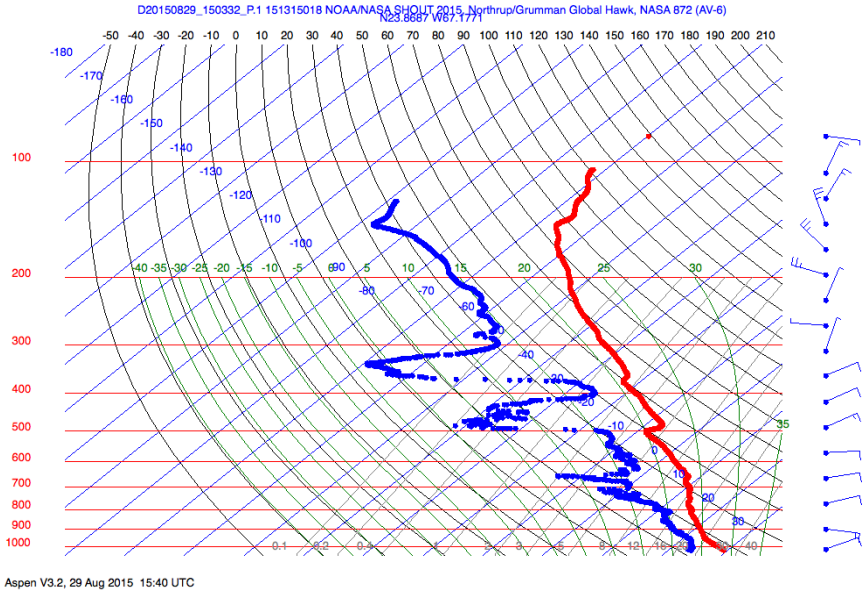
Below example of Ku at 8000 m



below same at 2000m

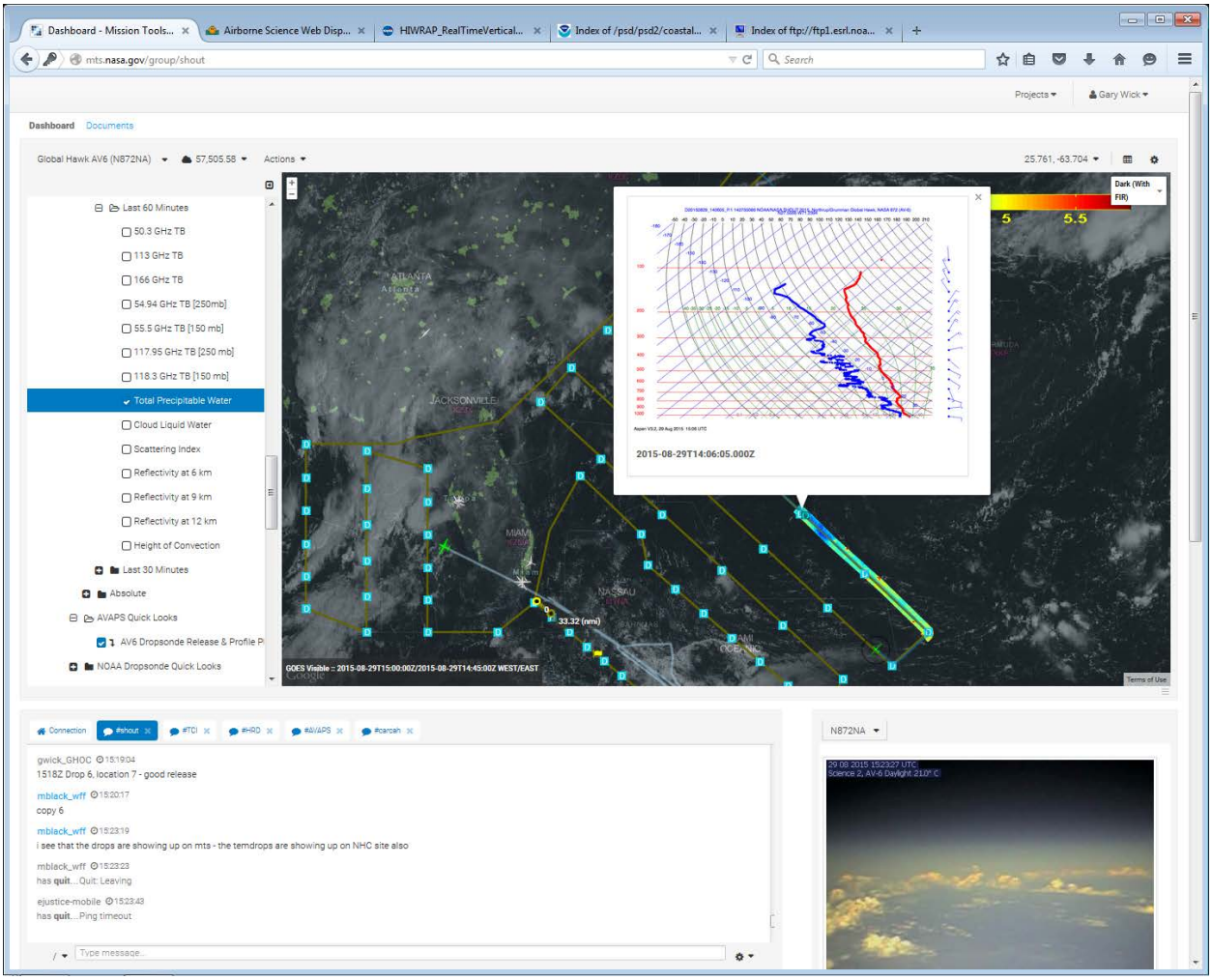


1503Z Drop 5, location 6 - good release



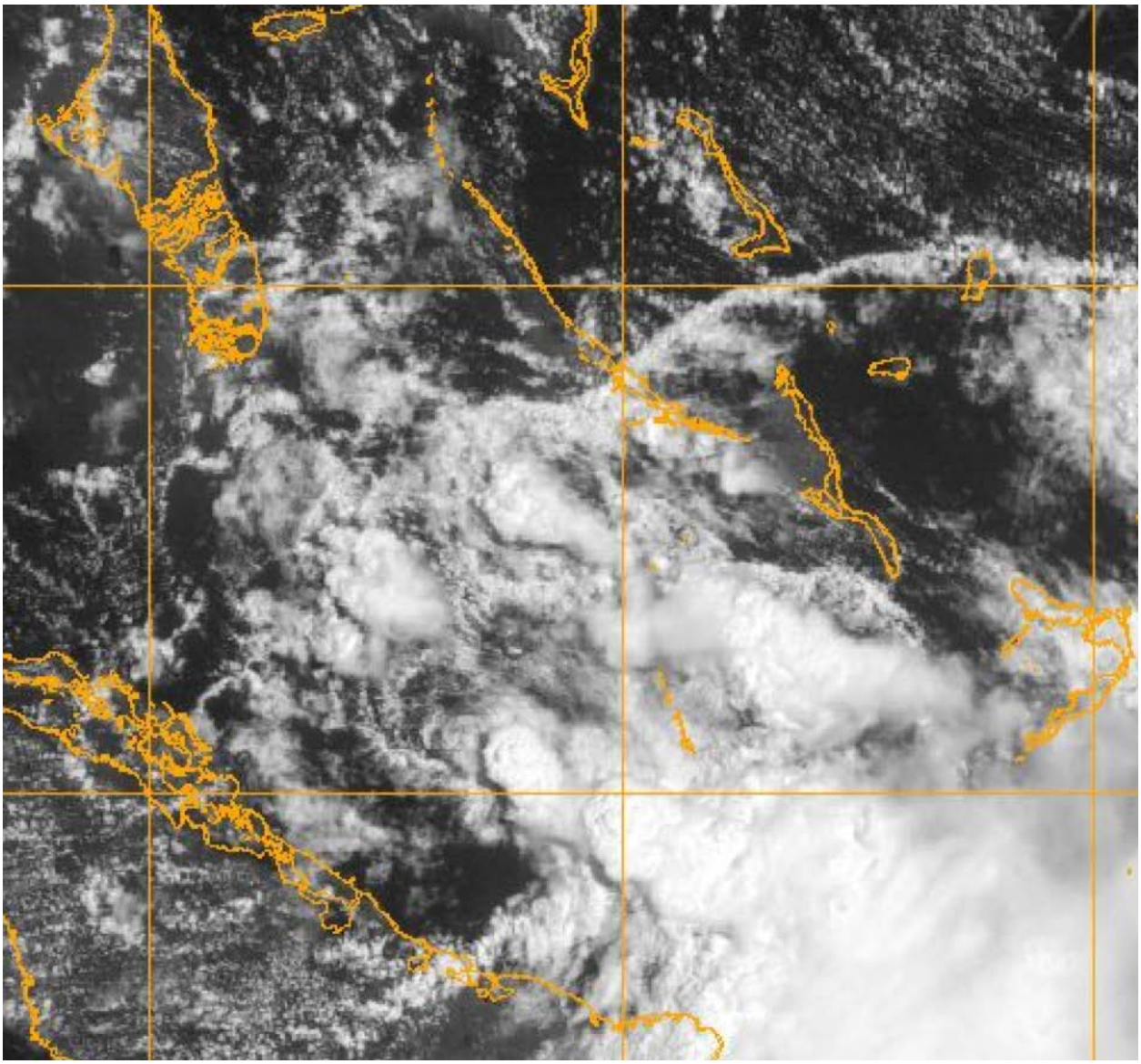
1510Z Tom came back and asked if we were willing to shift the southern most drops in the GoM further north to stay off of the Cuban FIR boundary. Jason asked and we do have permission to extend further West. As part of change we will drop the westernmost drops on lawnmower legs 2 and 3 to save time (and since likely wouldn't be able to drop in presence of air traffic).

Michael Black working sonde data and appearing in MTS

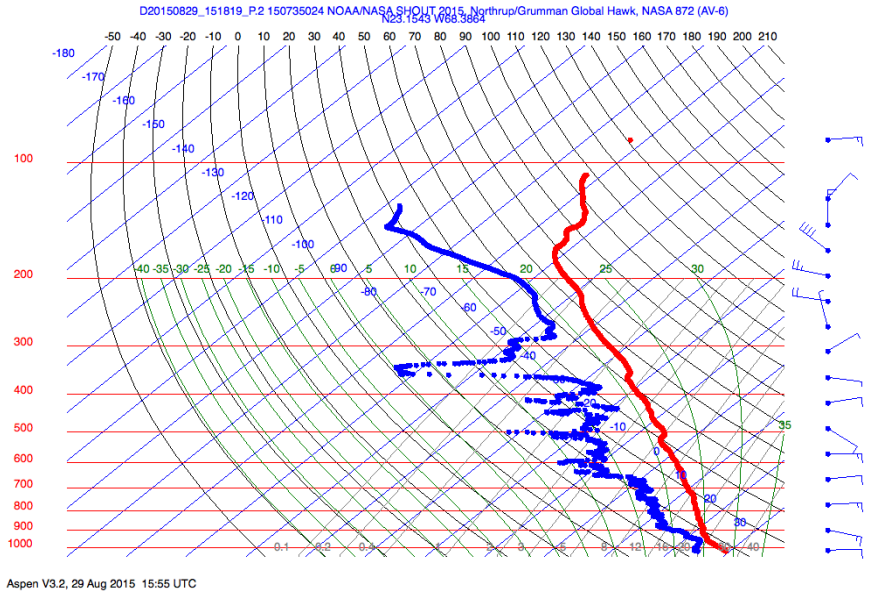


1514Z Loaded next sonde

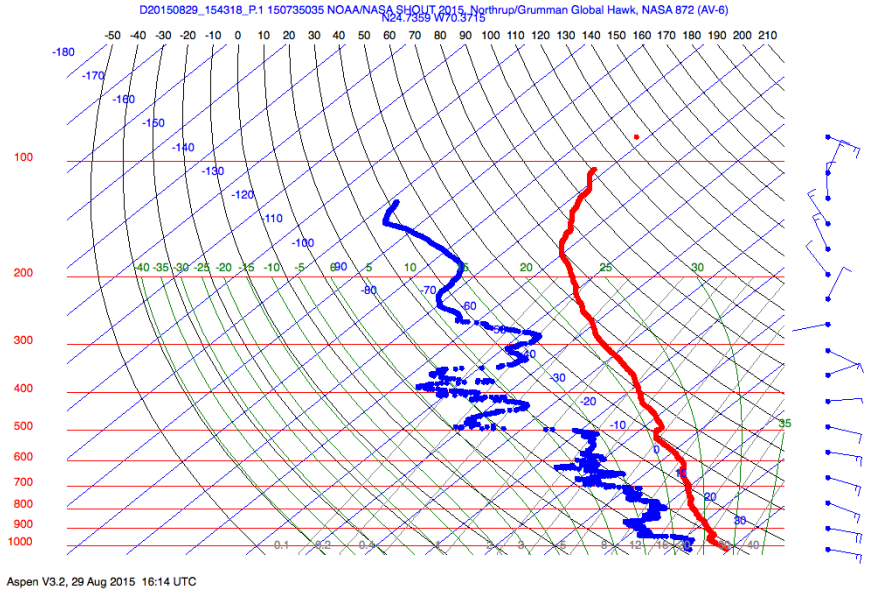
1515Z From Jim Moore in e-mail - hi res image



1518Z Drop 6 at location 7 - good release

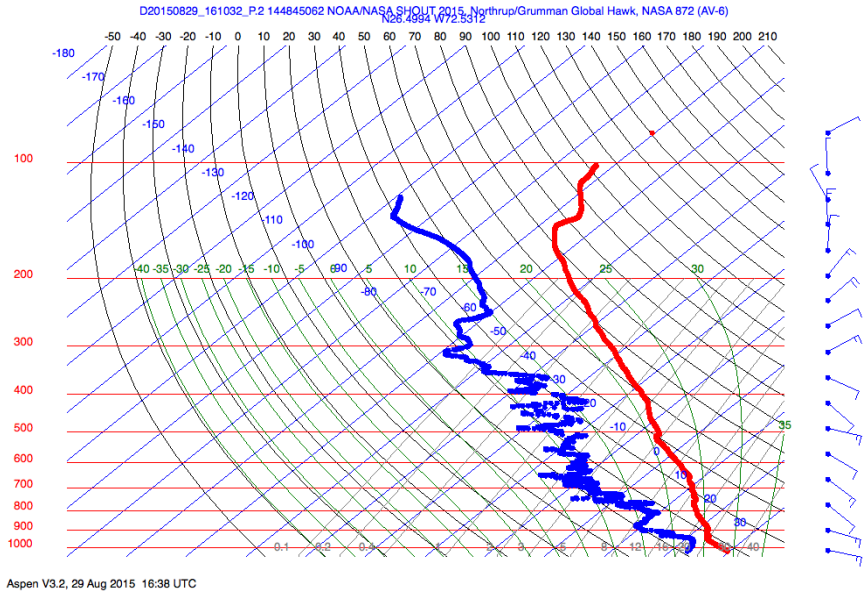


1543Z Drop 7 at location 8 - good release (skew-T below)

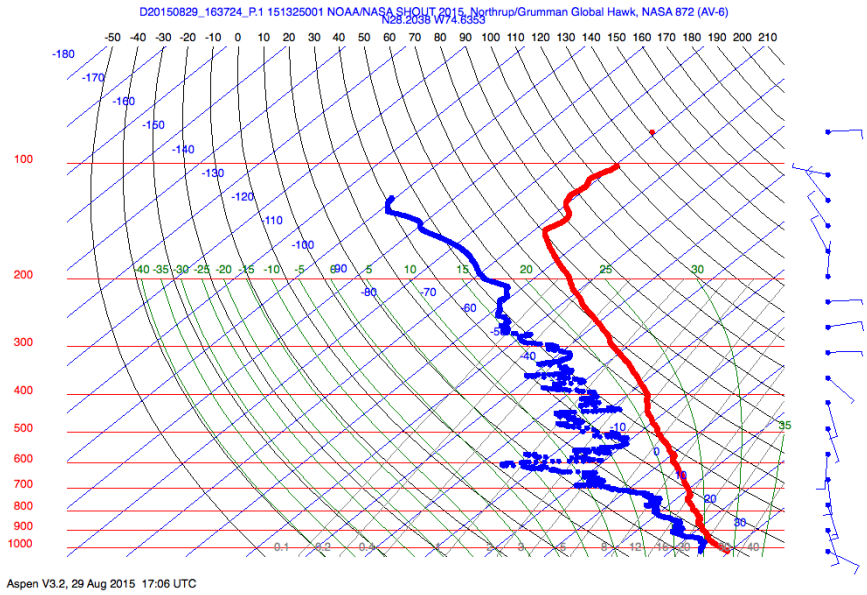


1606Z Sonde loaded

1610Z Drop 8 at location 9 - good release

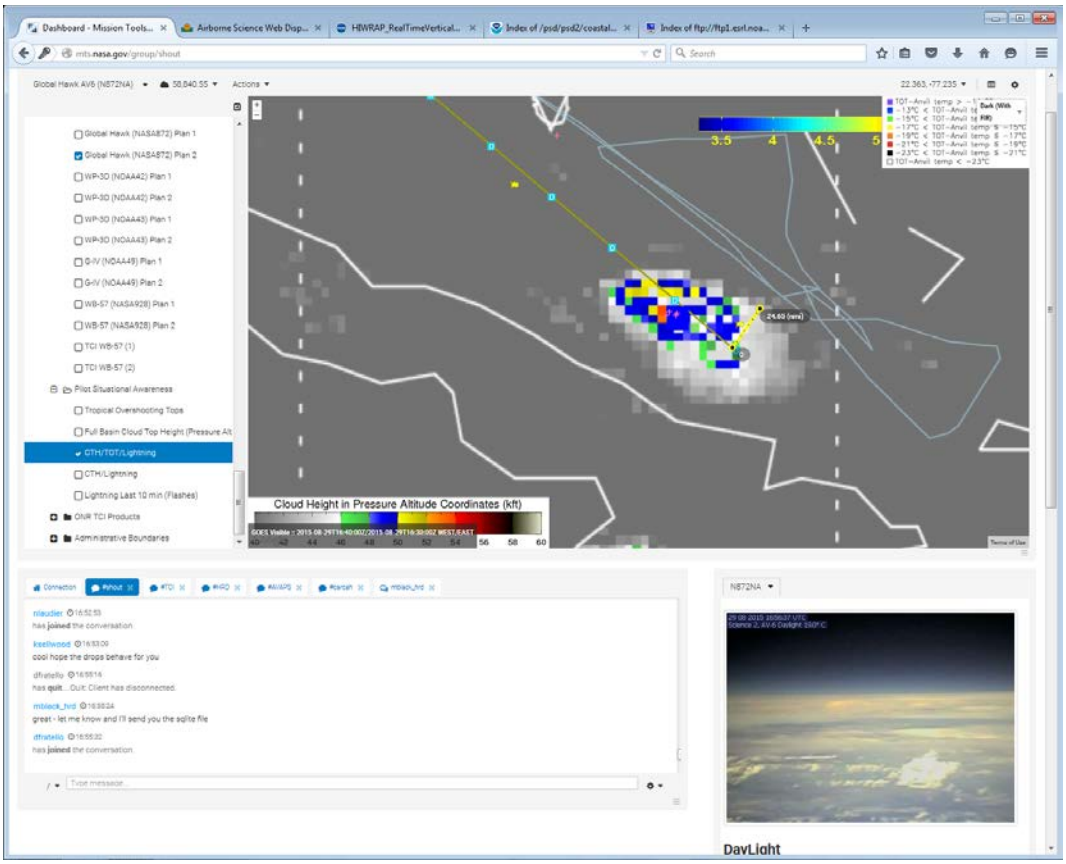


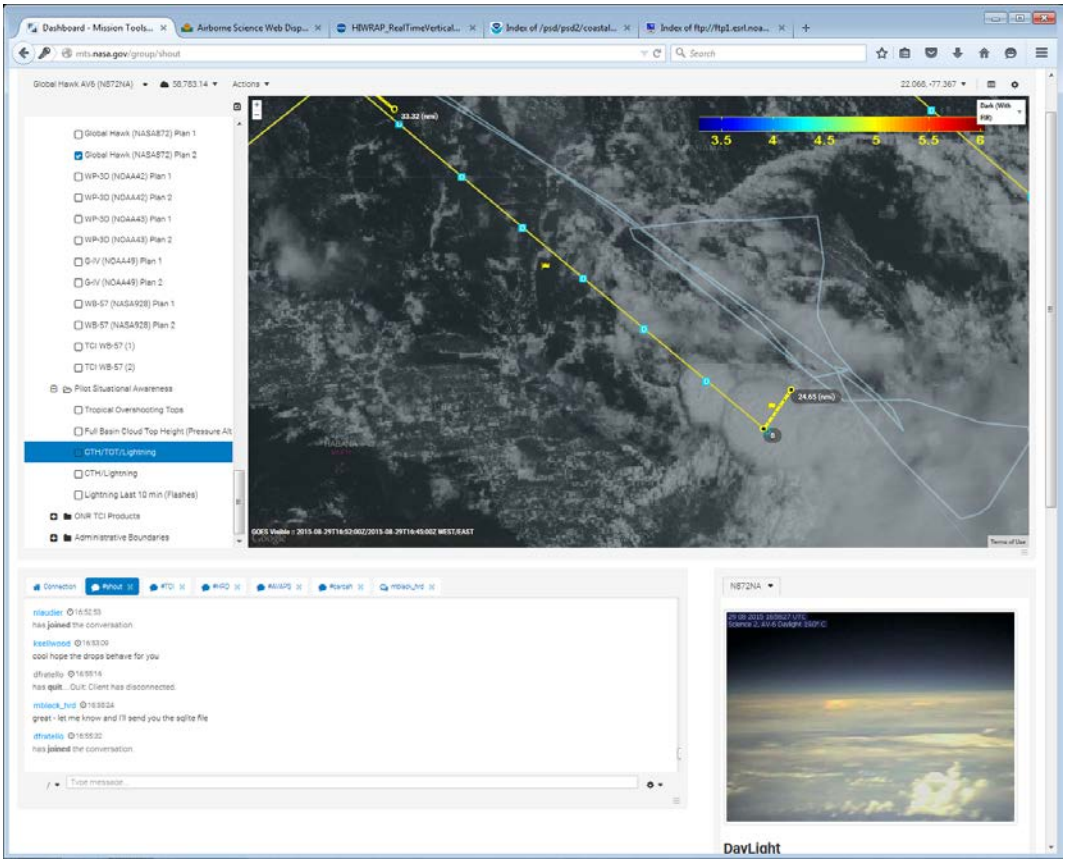
1637Z Drop 9 at location 10 - good release



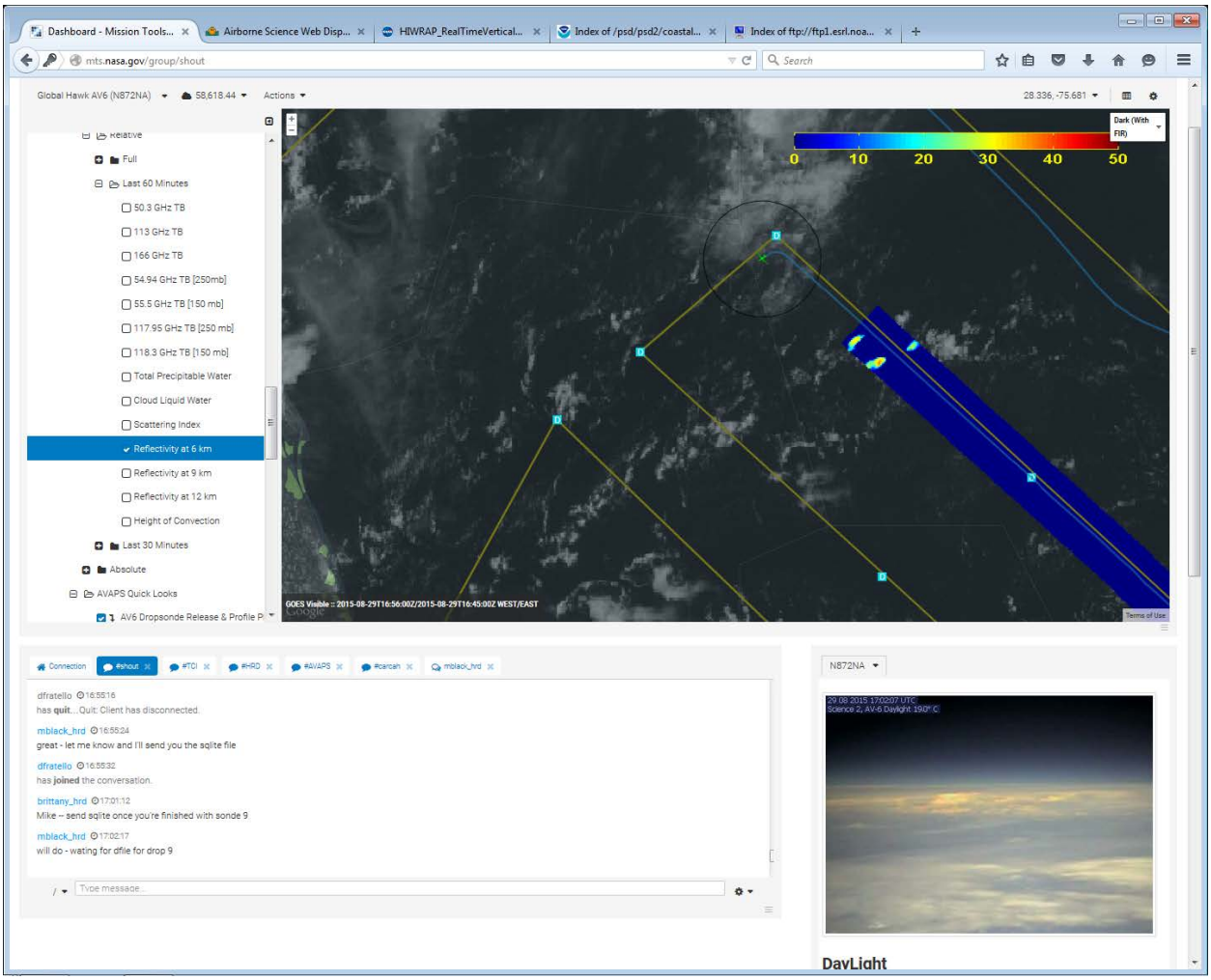
1651Z Mission reports will need to skip next two drops (11 and 12) due to air traffic. Had already shortened the legs to not go further in towards the coast. Delay will be on order 50 minutes

Looking ahead: Current convection is aligned very well along our proposed racetrack. Cloud tops and lightning are such that we would be pushing limits. With lost link situation, can't get trapped behind.

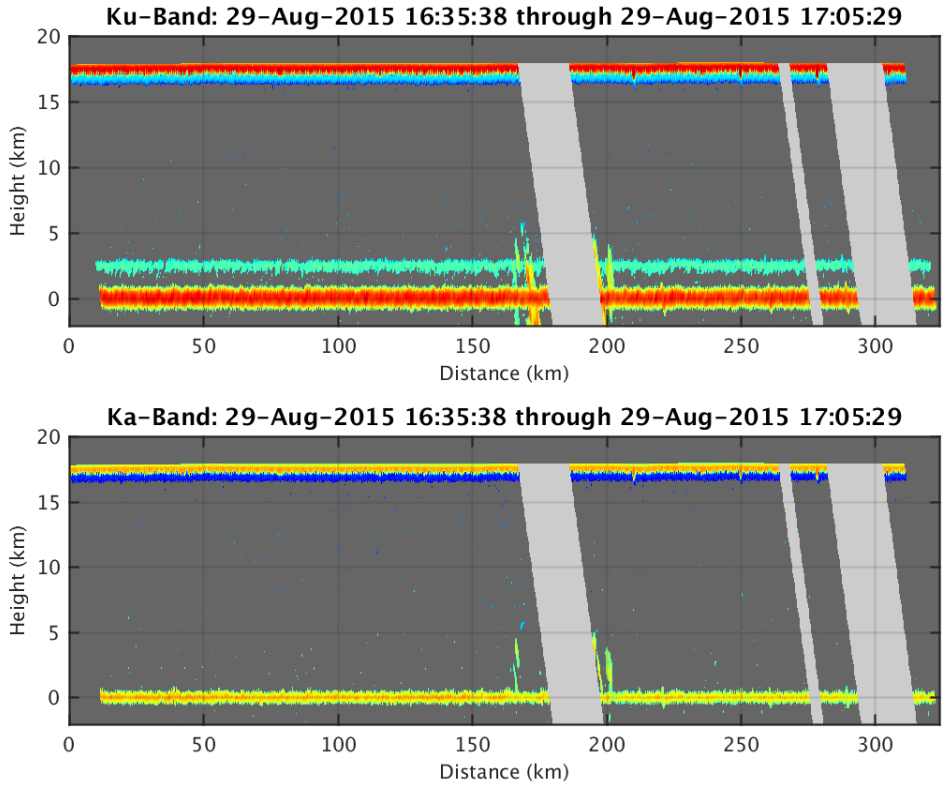

Dashboard - Mission Tools...
Airborne Science Web Disp...
HIWRAP_RealTimeVertical...
Index of /psd/psd2/coastal...
Index of ftp://ftp1.esrl.noa...
mts.nasa.gov/group/shout
Search
Global Hawk AV6 (N872NA)
58,840.55
Actions
22.363, -77.235
Global Hawk (NASA872) Plan 1
Global Hawk (NASA872) Plan 2
WP-3D (NOAA42) Plan 1
WP-3D (NOAA42) Plan 2
WP-3D (NOAA43) Plan 1
WP-3D (NOAA43) Plan 2
G-IV (NOAA49) Plan 1
G-IV (NOAA49) Plan 2
WB-57 (NASA928) Plan 1
WB-57 (NASA928) Plan 2
TCI WB-57 (1)
TCI WB-57 (2)
Pilot Situational Awareness
Tropical Overshooting Tops
Full Basin Cloud Top Height (Pressure Alt
CTH/TOT/Lightning
CTH/Lightning
Lightning Last 10 min (Flashes)
ONR TCI Products
Administrative Boundaries
3.5
4
4.5
5
24.65 (nm)
Cloud Height in Pressure Altitude Coordinates (kft)
56
58
60
#shout
nlaudier
has joined the conversation
keellwood
cool hope the drops behave for you
dfratello
has quit... Quit: Client has disconnected
mblack_hrd
great - let me know and I'll send you the sqlite file
dfratello
has joined the conversation
Type message...
N872NA
DavLight


Dashboard - Mission Tools...
Airborne Science Web Disp...
HIWRAP_RealTimeVertical...
Index of /psd/psd2/coastal...
Index of ftp://ftp1.esrl.noa...
mts.nasa.gov/group/shout
Search
Global Hawk AV6 (N872NA)
58,783.14
Actions
22.066, -77.367
Global Hawk (NASA872) Plan 1
Global Hawk (NASA872) Plan 2
WP-3D (NOAA42) Plan 1
WP-3D (NOAA42) Plan 2
WP-3D (NOAA43) Plan 1
WP-3D (NOAA43) Plan 2
G-IV (NOAA49) Plan 1
G-IV (NOAA49) Plan 2
WB-57 (NASA928) Plan 1
WB-57 (NASA928) Plan 2
TCI WB-57 (1)
TCI WB-57 (2)
Pilot Situational Awareness
Tropical Overshooting Tops
Full Basin Cloud Top Height (Pressure Alt
CTH/TOT/Lightning
CTH/Lightning
Lightning Last 10 min (Flashes)
ONR TCI Products
Administrative Boundaries
33.32 (nm)
3.5
4
4.5
5
5.5
6
24.65 (nm)
#shout
nlaudier
has joined the conversation
keellwood
cool hope the drops behave for you
dfratello
has quit... Quit: Client has disconnected
mblack_hrd
great - let me know and I'll send you the sqlite file
dfratello
has joined the conversation
Type message...
N872NA
DavLight

1704Z HAMSR reports seeing a few precipitating clouds just behind. Below is their reflectivity at 6 km:

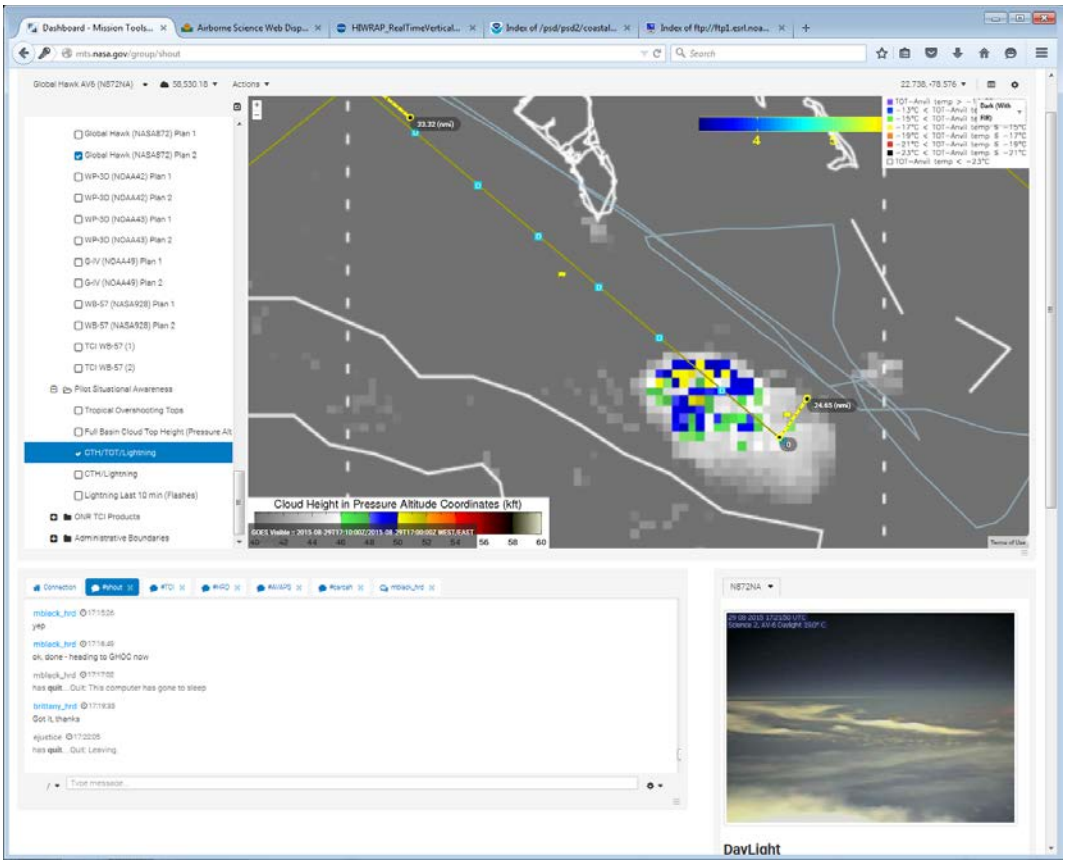


HIWRAP showed just small echoes:



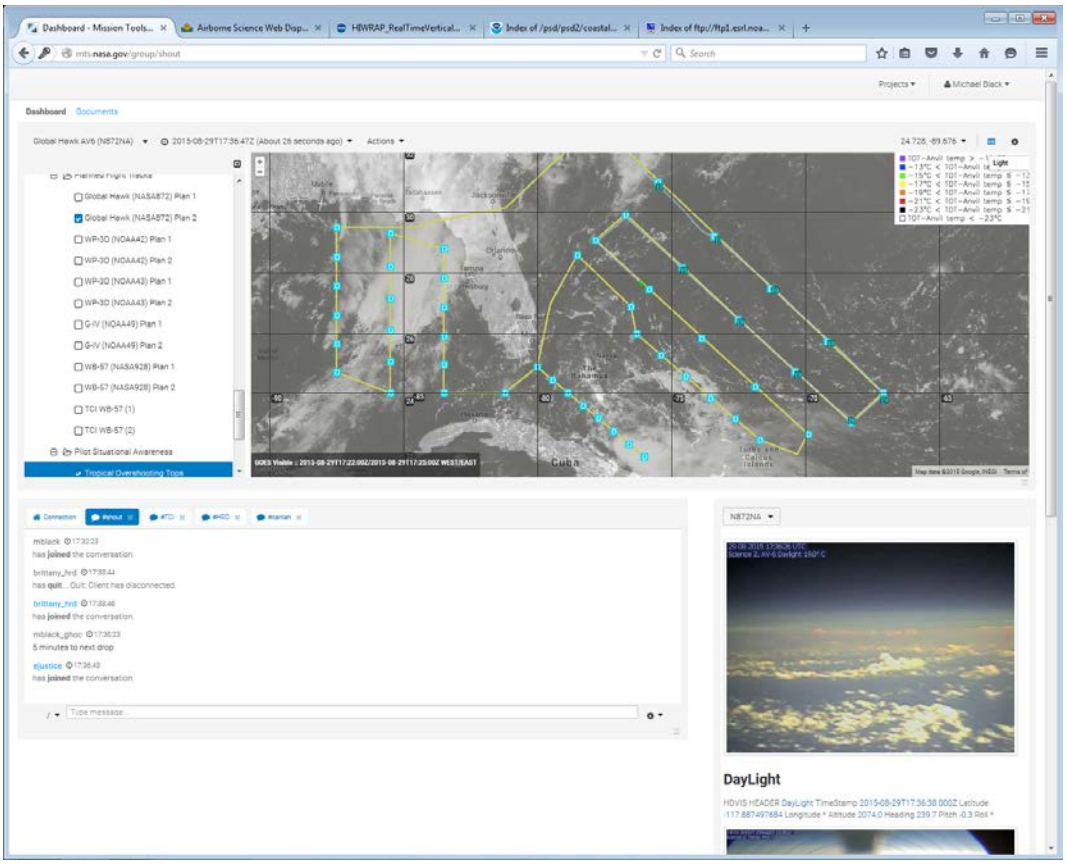
LIP reports that they saw electric fields and perhaps just a bit of lightning in those targets

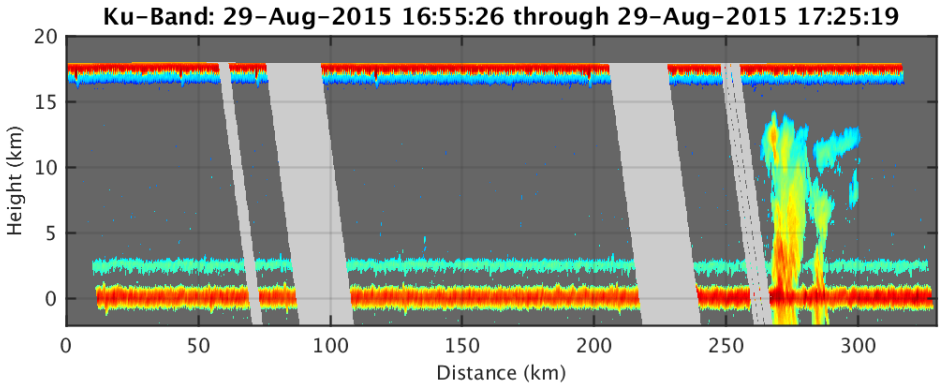
1722Z Convection already appearing less active (below image)

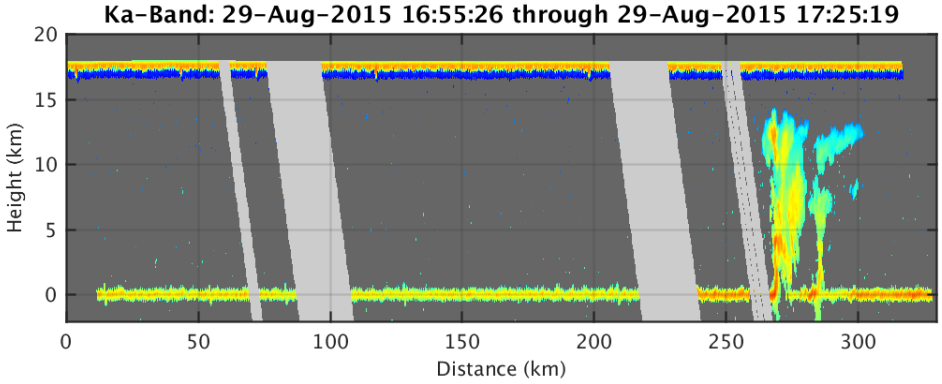


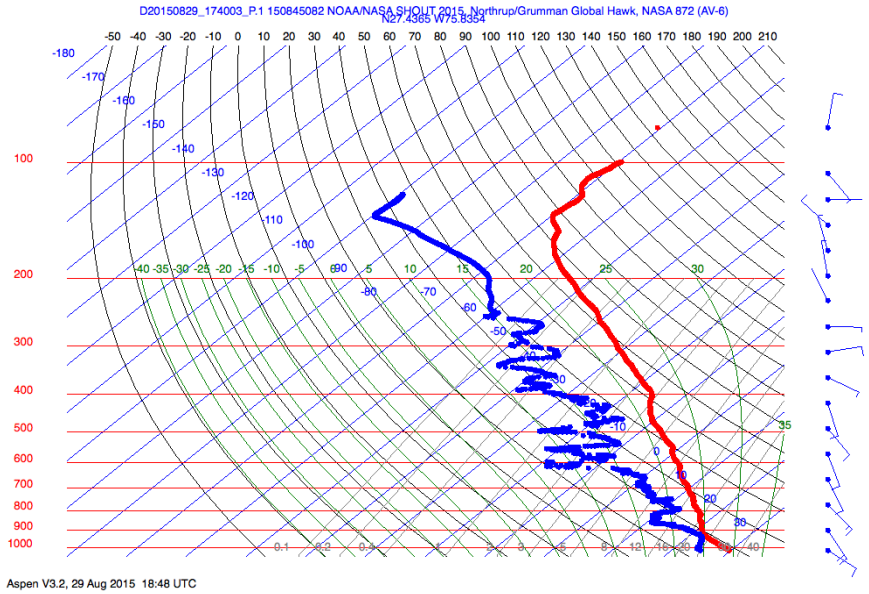
1737 - M. Black taking over G. Wick - skipped two drops due to air trafiic

Start of second shift: Michael Black, Natalie Laudier, and Pete Black


Dashboard - Mission Tools...
Airborne Science Web Disp...
HIWRAP_RealTimeVertical...
Index of /psd/psd2/coastal...
Index of ftp://ftp1.esrl.noa...
mtis.nasa.gov/group/shout
Dashboard
Documents
Global Hawk AV6 (N872NA)
Actions
Global Hawk (NASA872) Plan 1
Global Hawk (NASA872) Plan 2
WP-3D (NOAA42) Plan 1
WP-3D (NOAA42) Plan 2
WP-3D (NOAA43) Plan 1
WP-3D (NOAA43) Plan 2
G-IV (NOAA49) Plan 1
G-IV (NOAA49) Plan 2
WB-57 (NASA928) Plan 1
WB-57 (NASA928) Plan 2
TCI WB-57 (1)
TCI WB-57 (2)
Pilot Situational Awareness
Tropical Overshooting Tops
Cuba
N872NA
DayLight

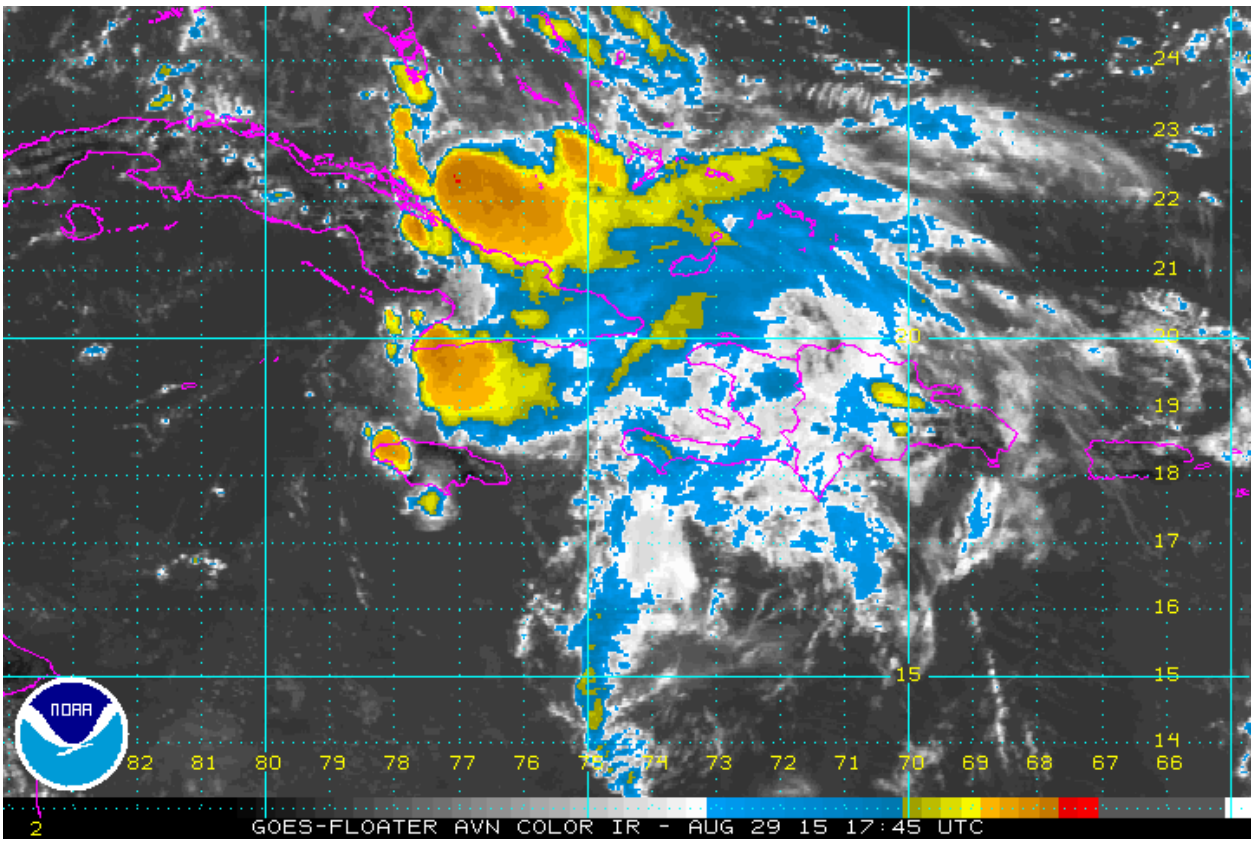

Ku-Band: 29-Aug-2015 16:55:26 through 29-Aug-2015 17:25:19
Height (km)
Distance (km)
0
5
10
15
20
0
50
100
150
200
250
300

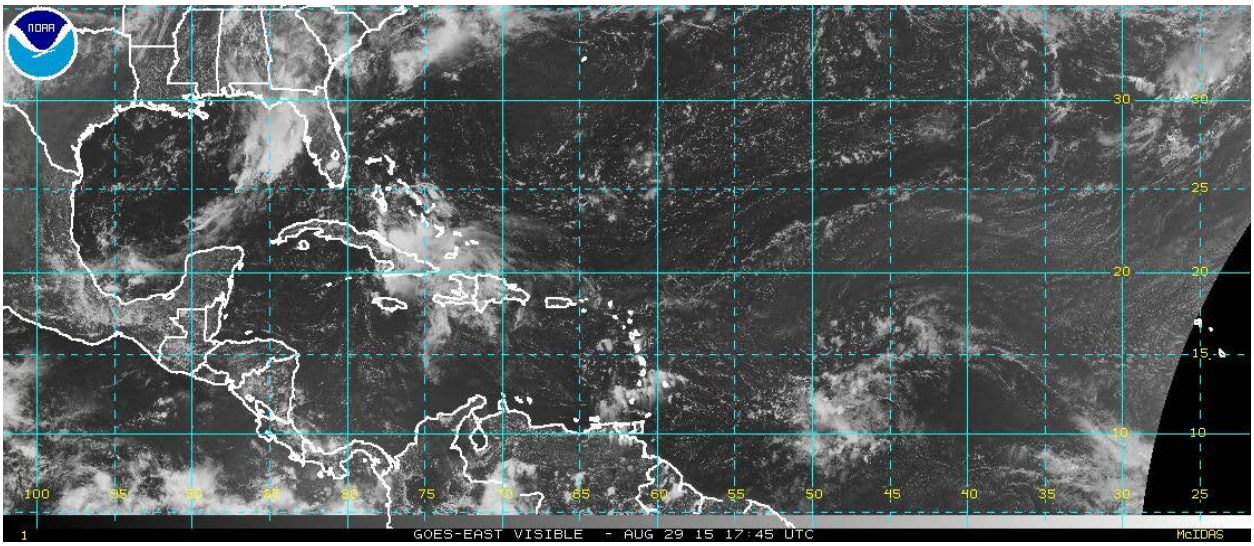

Ka-Band: 29-Aug-2015 16:55:26 through 29-Aug-2015 17:25:19
Height (km)
Distance (km)
0
5
10
15
20
0
50
100
150
200
250
300



1740z drop 10 at location 13

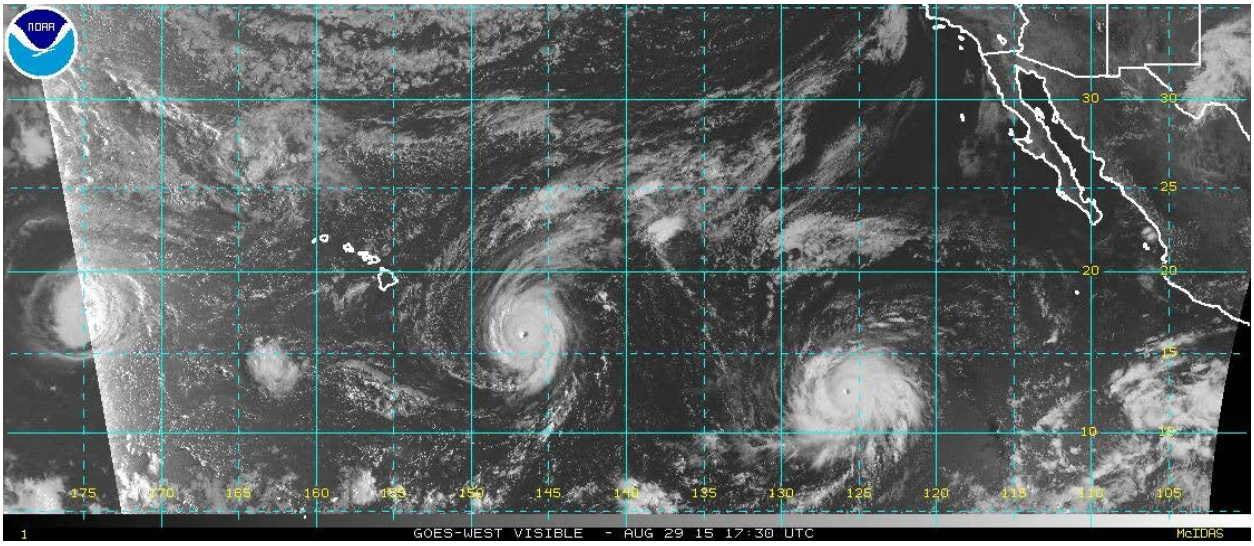
1805z drop 11 at location 14

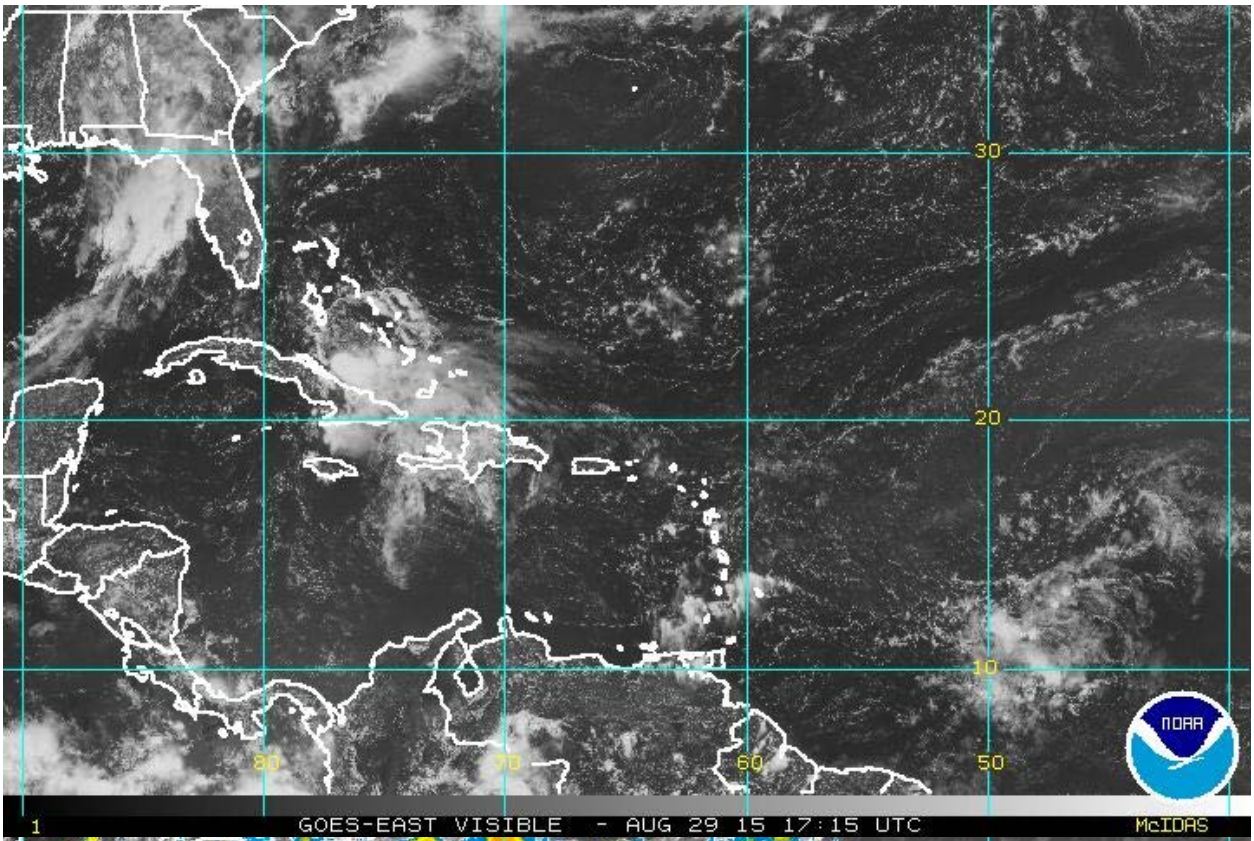


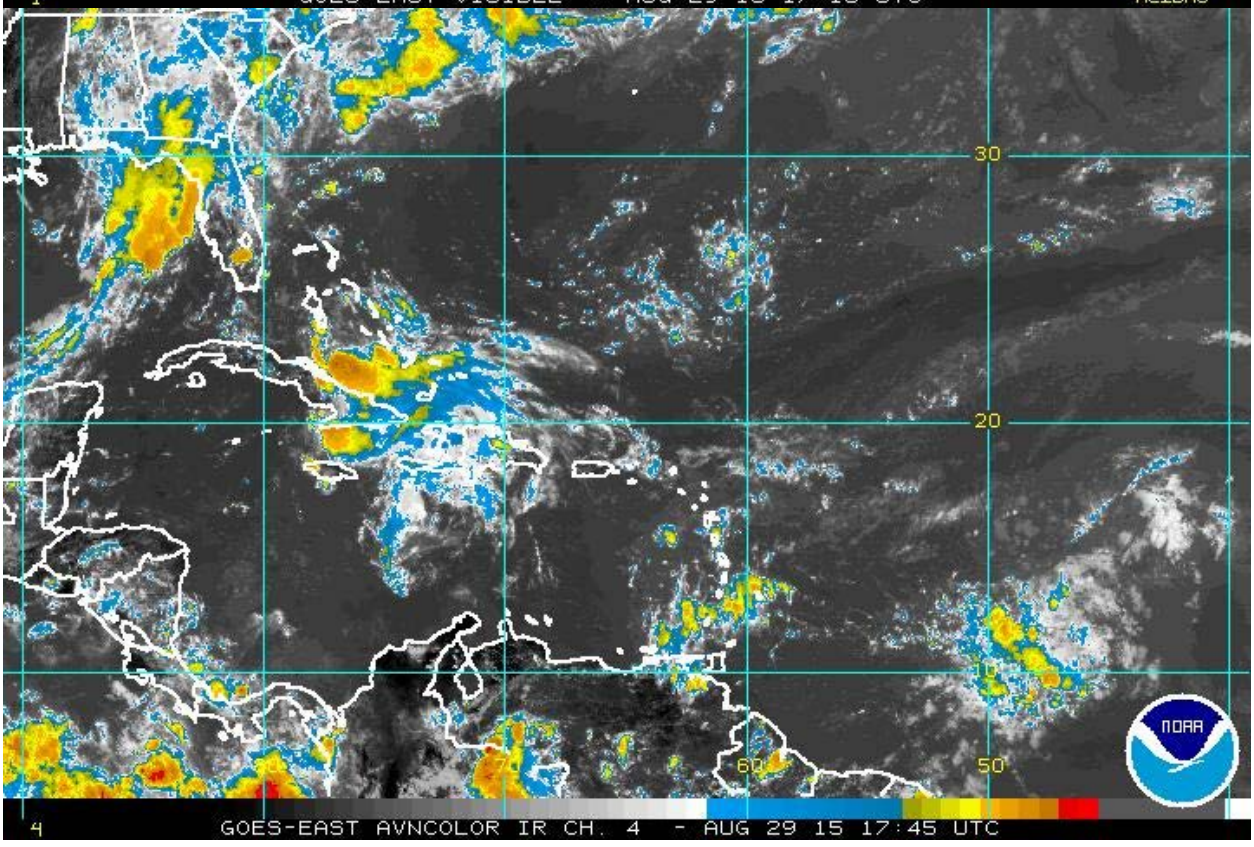


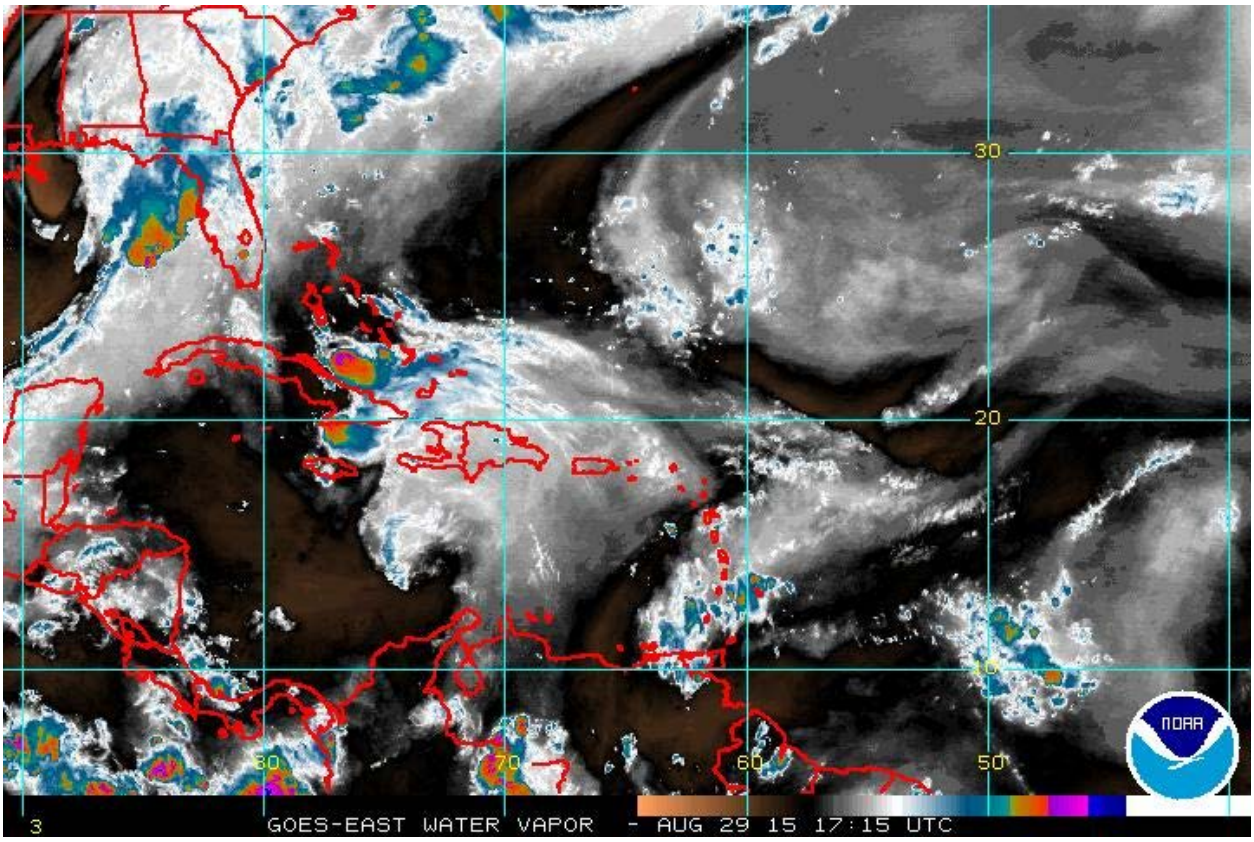
Above is what we are flying … and …

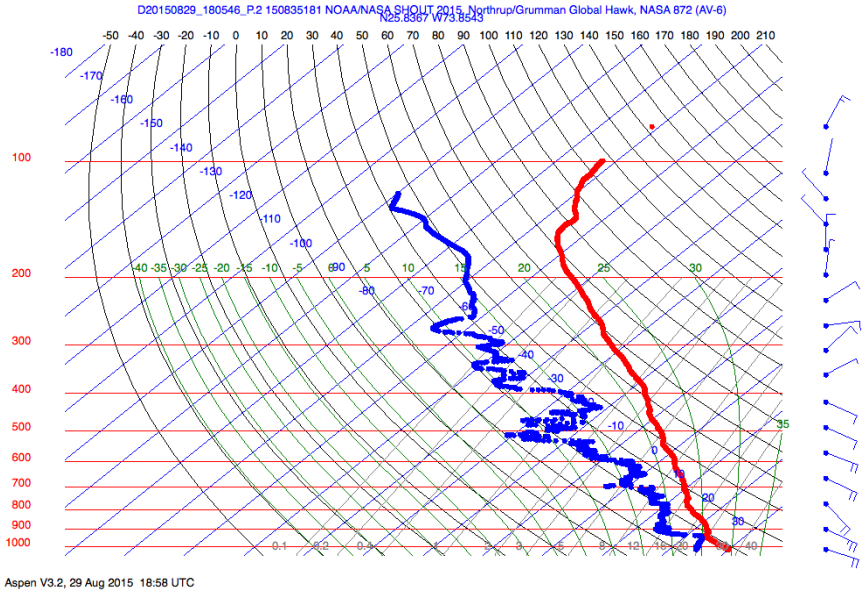
Below is what we could have been flying: coulda, woulda, shoulda!



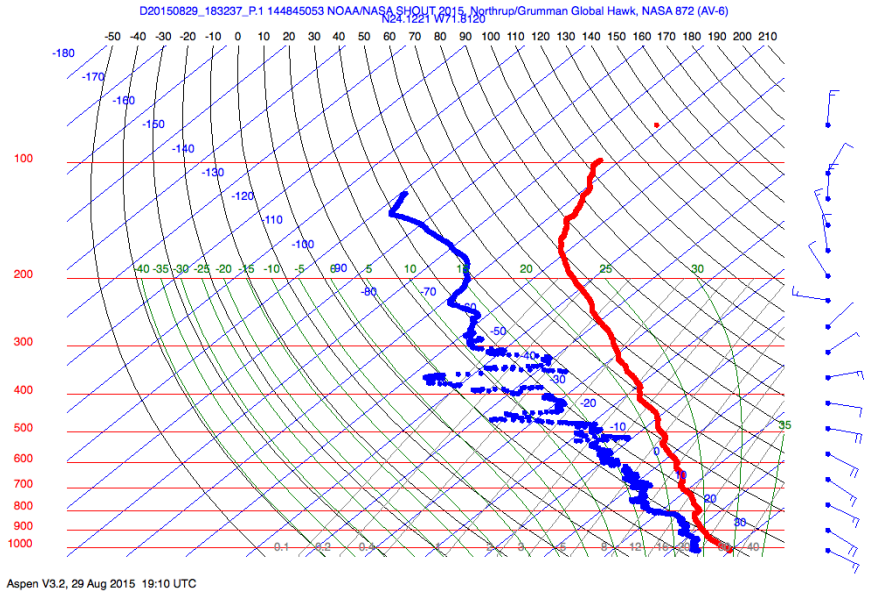

30
20
10
80
70
60
50
NOAA
1
GOES-EAST VISIBLE - AUG 29 15 17:15 UTC
McIDAS


30
20
10
60
50
NOAA
4
GOES-EAST AVNCOLOR IR CH. 4 - AUG 29 15 17:45 UTC

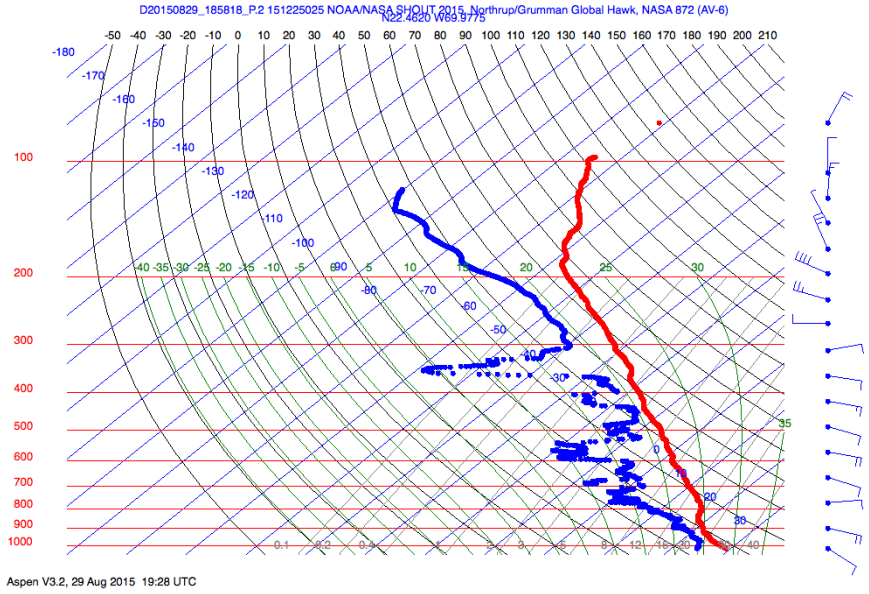




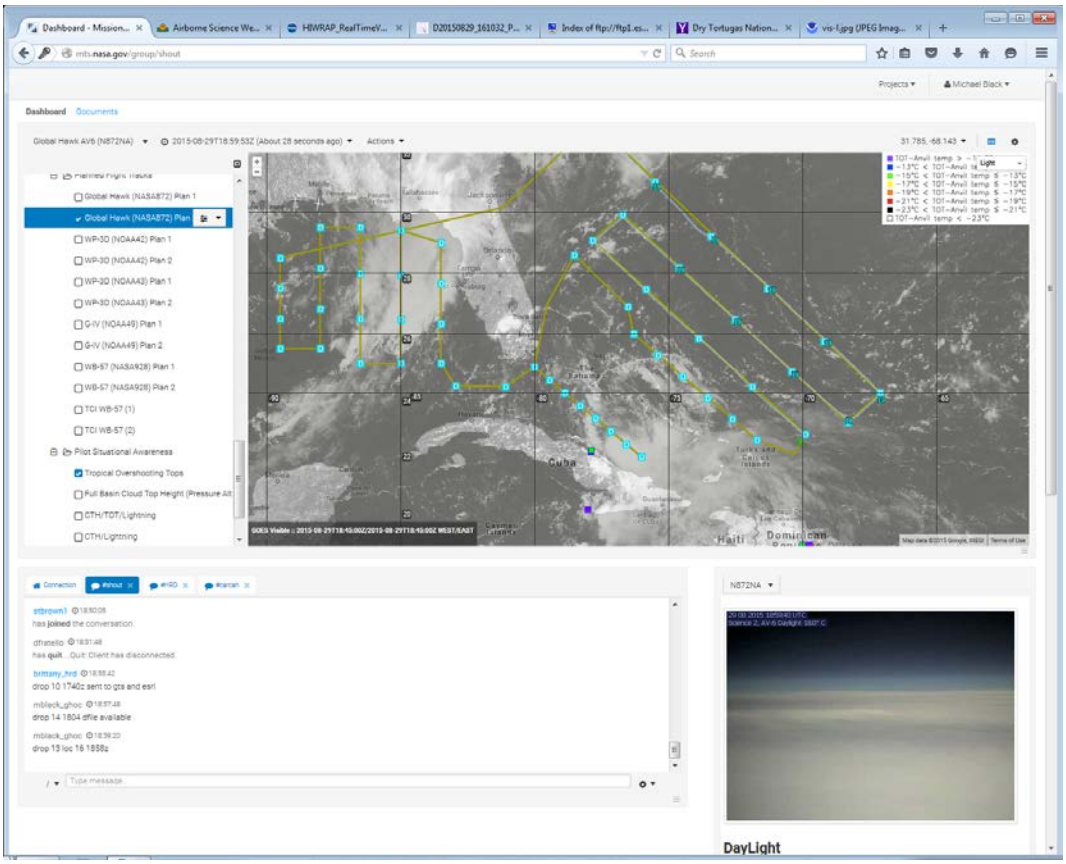
drop 11 1805z loc 14 (above)



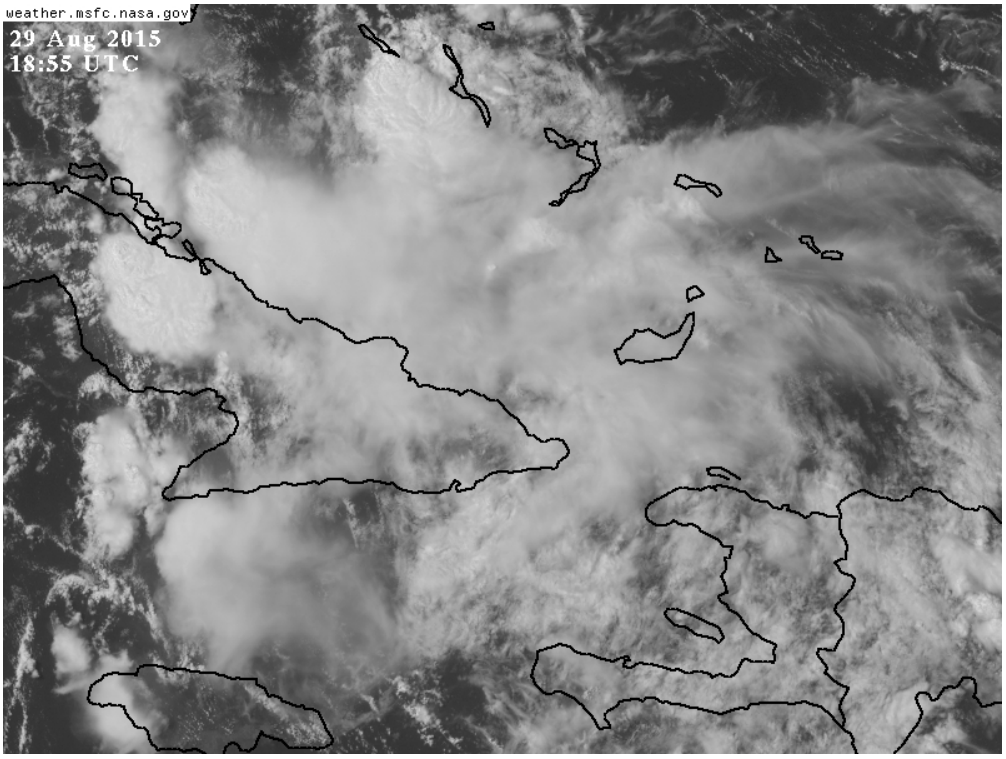
drop 12 1832z loc 15

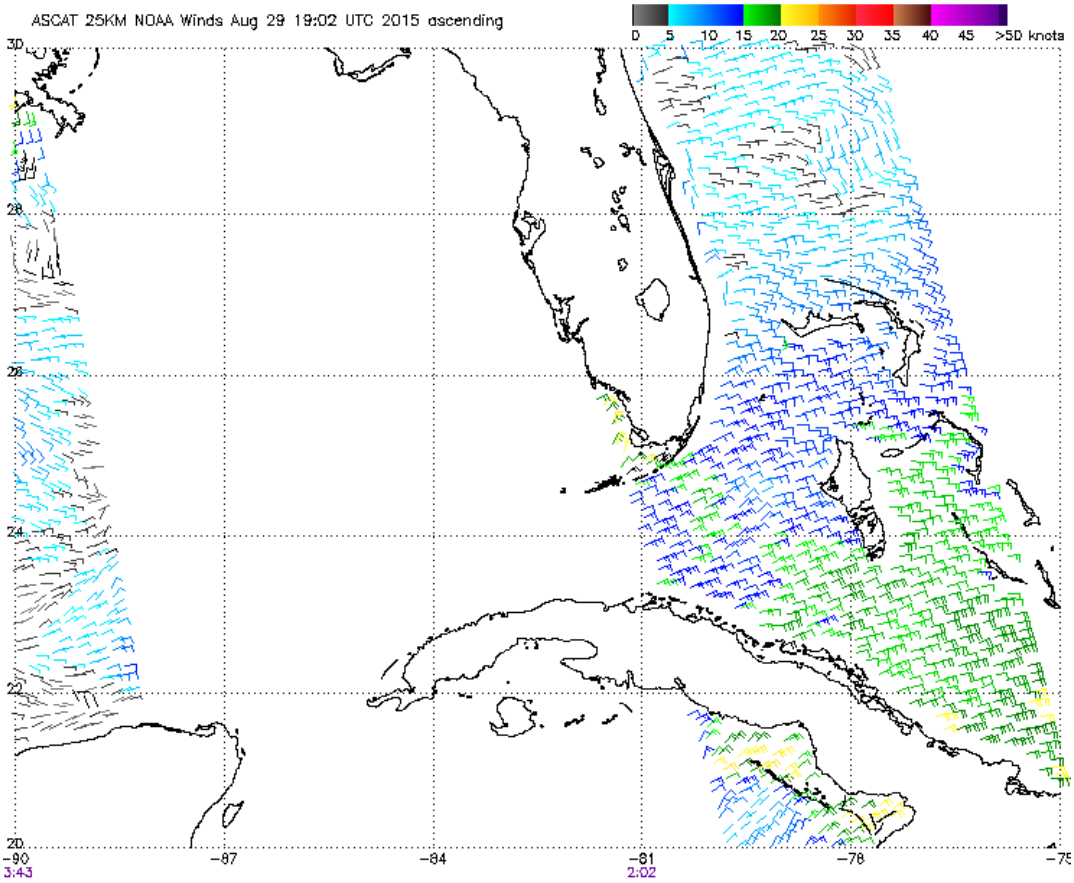


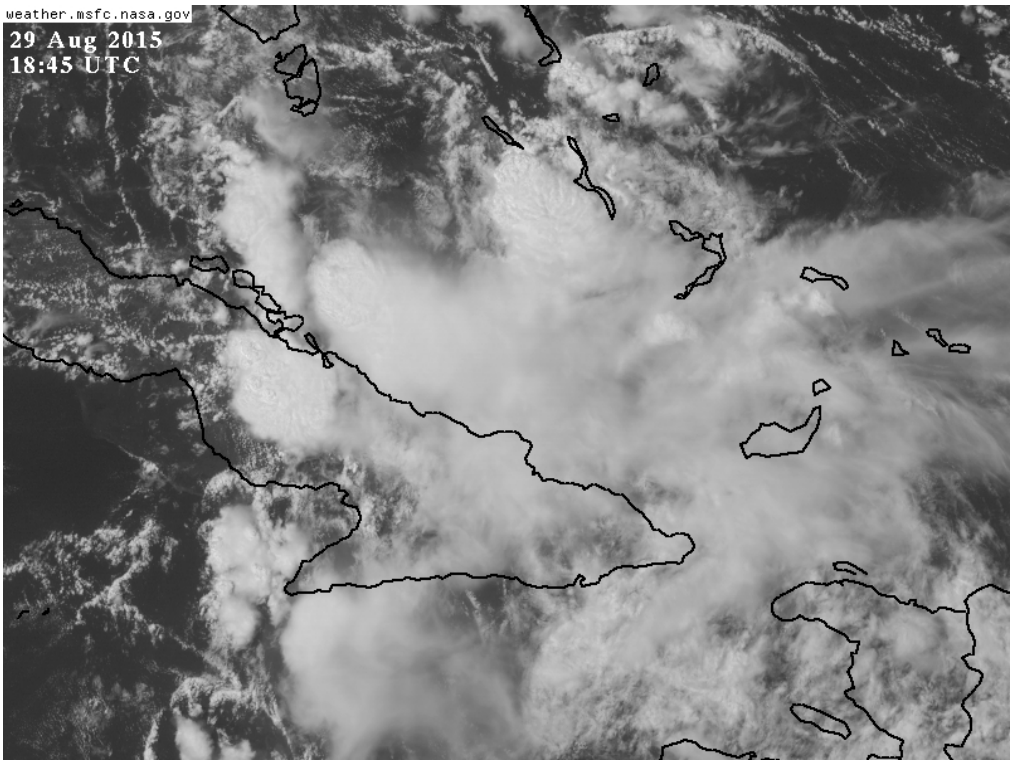
drop 13 1858z loc 16

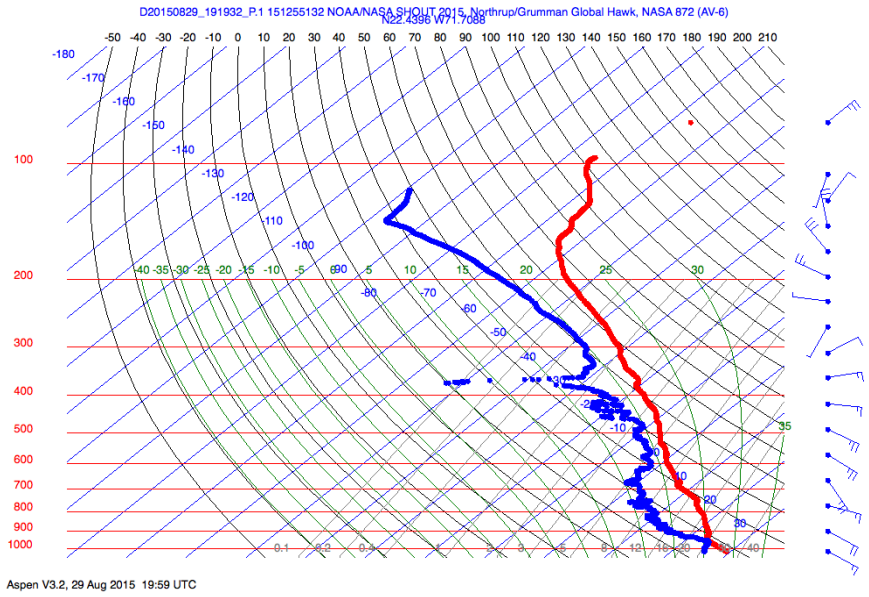


1858z - Jason Updated flight plan for extra N-S leg in Gulf

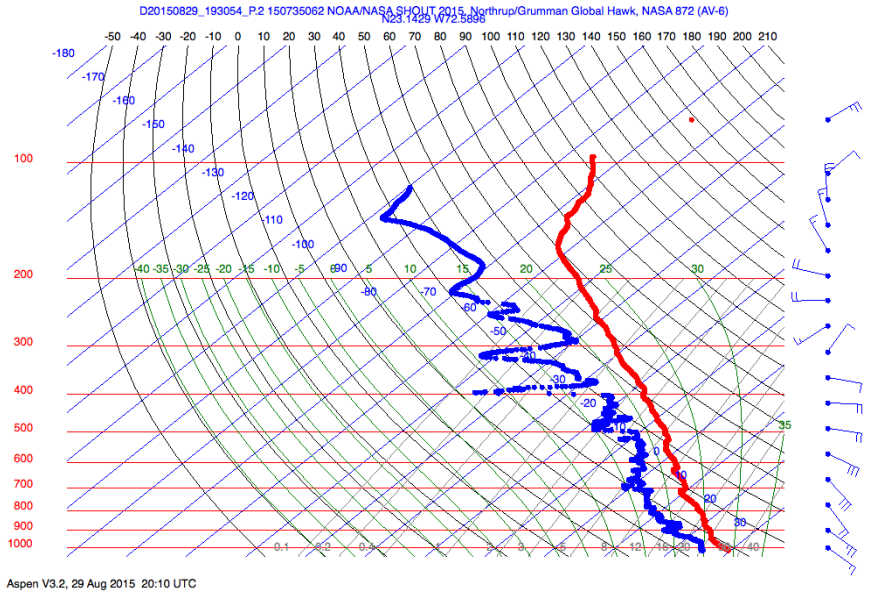



ASCAT 25KM NOAA Winds Aug 29 19:02 UTC 2015 ascending
0 5 10 15 20 25 30 35 40 45 >50 knots
30
28
26
24
22
20
-90
-87
-84
-81
-78
-75
3:43
2:02
Note: 1) Times are GMT 2)Times along bottom correspond to measurement at 25N
3)Data buffer is 22 hrs from Aug 29 19:02 UTC 2015 4) Black wind barbs indicate possible contamination
NOAA/NESDIS/Center for Satellite Applications and Research

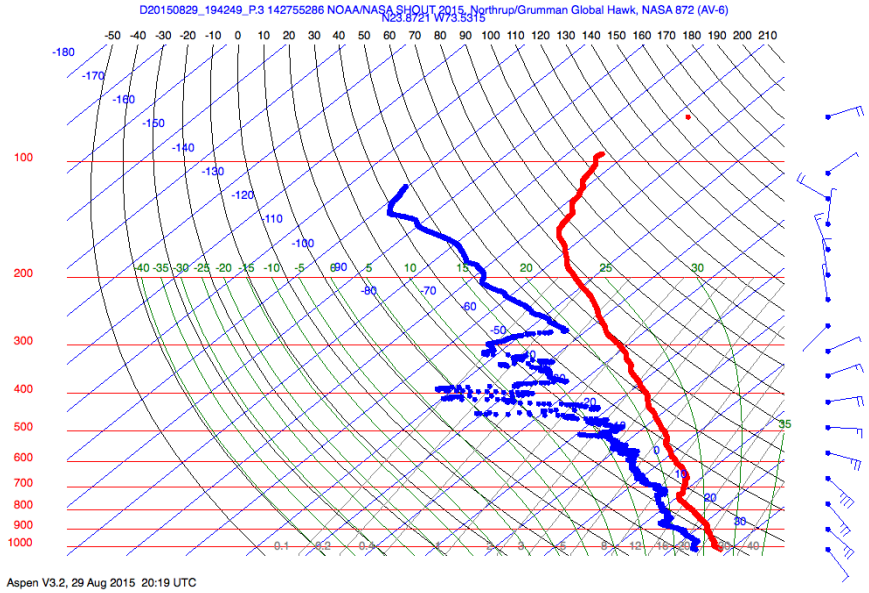

weather.msfc.nasa.gov
29 Aug 2015
18:45 UTC



Drop 14 Loc 17 1919z



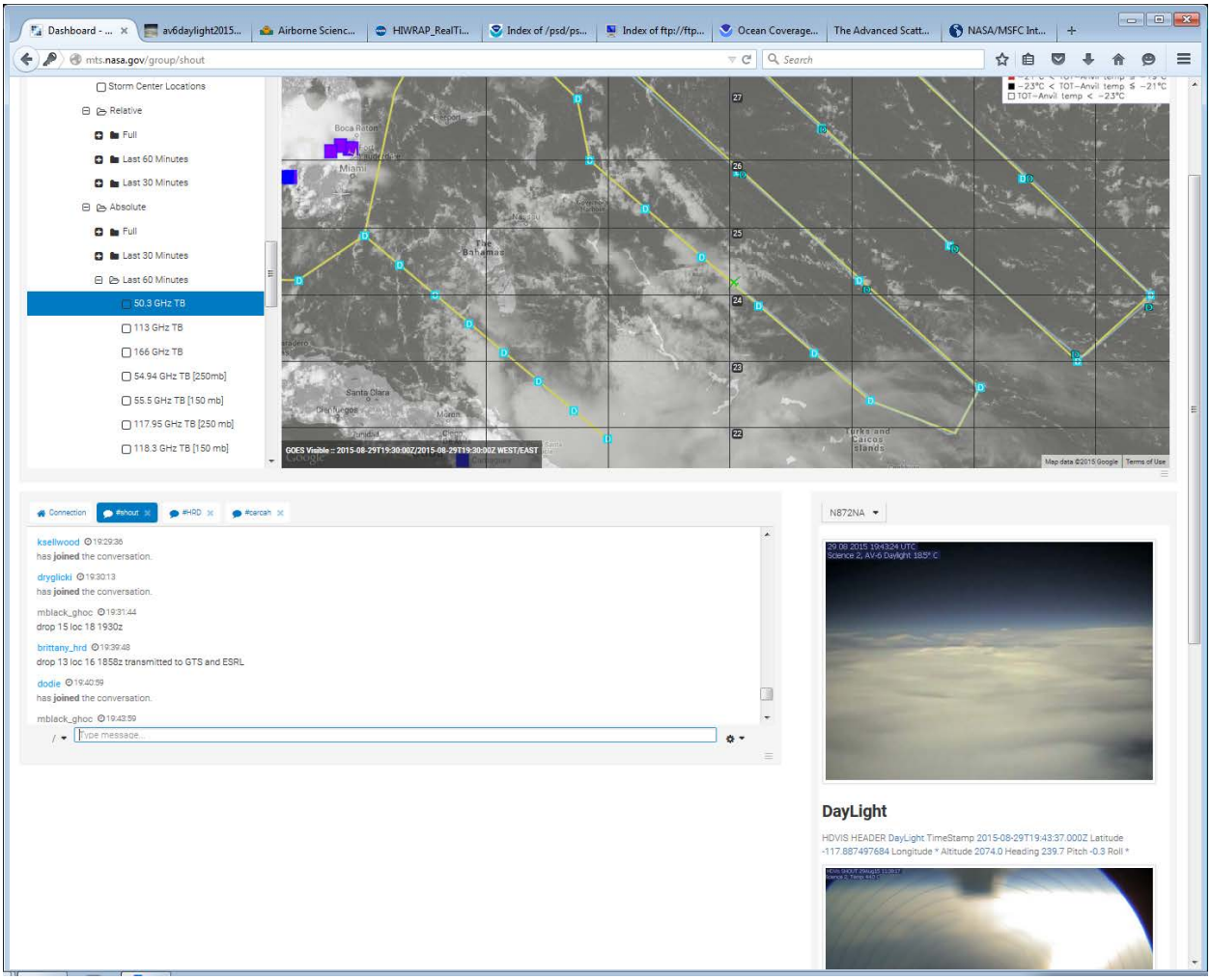
Drop 15 loc 18 1930z



Drop 16 loc 19 1943z

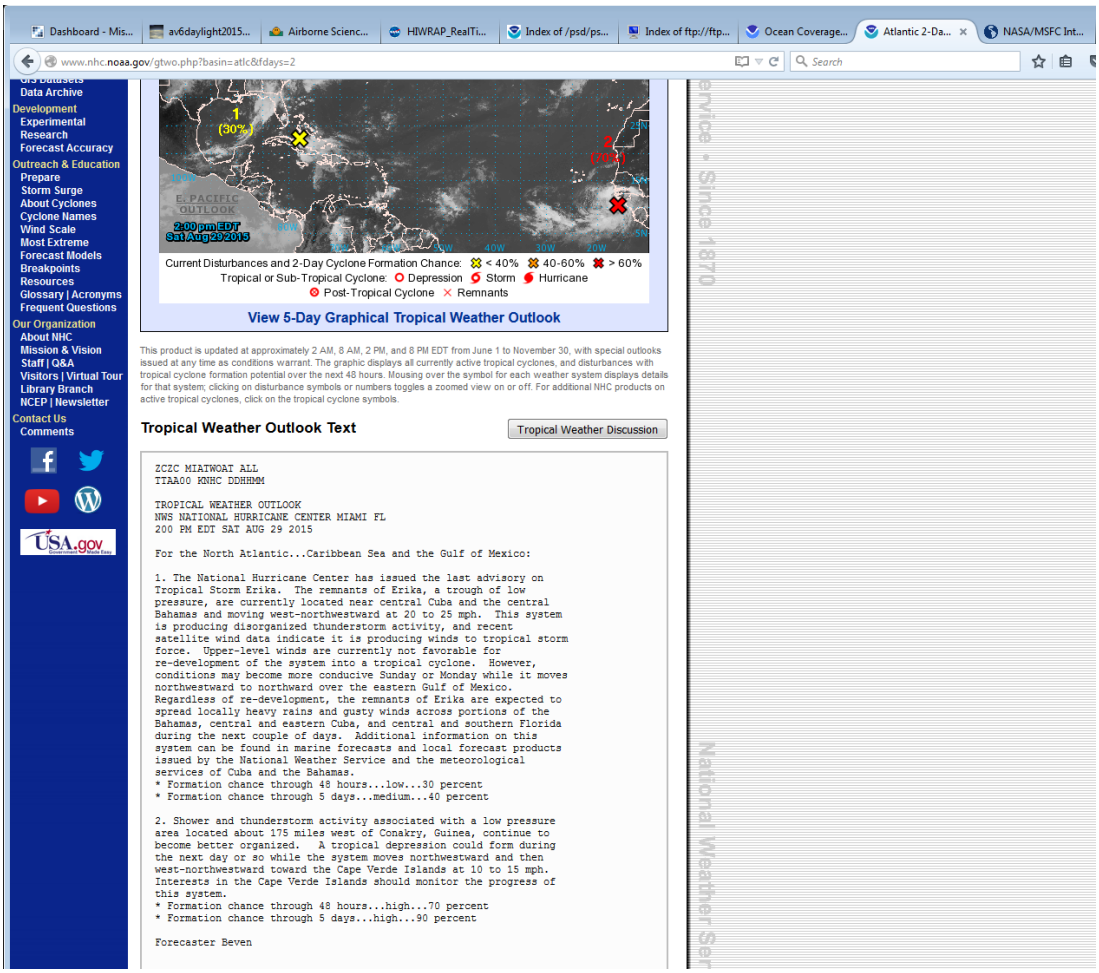

29 08 2015 20:22:18 UTC
Science 2, AV-6 Daylight 19.0° C

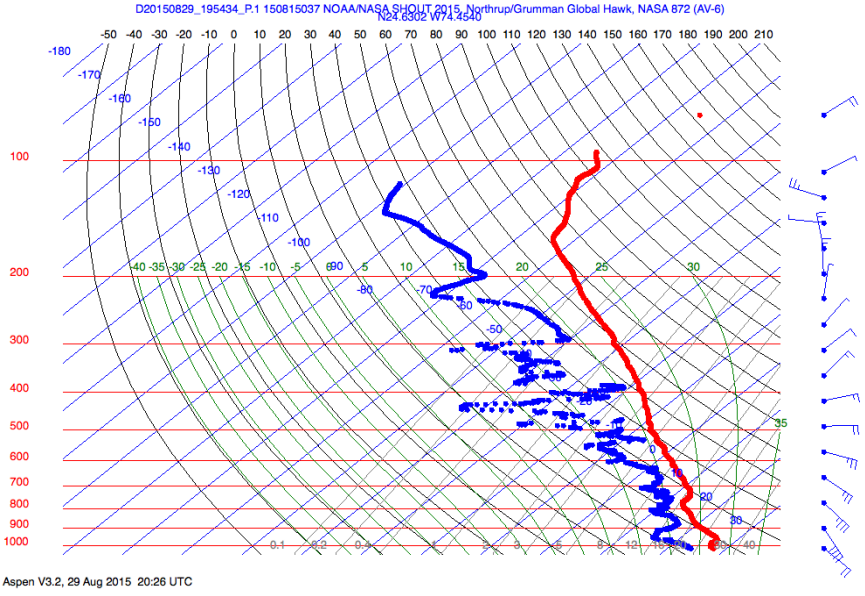

29 08 2015 20:26:36 UTC
Science 2, AV-6 Daylight 19.0° C



Drop 20 Loc 23 2027z

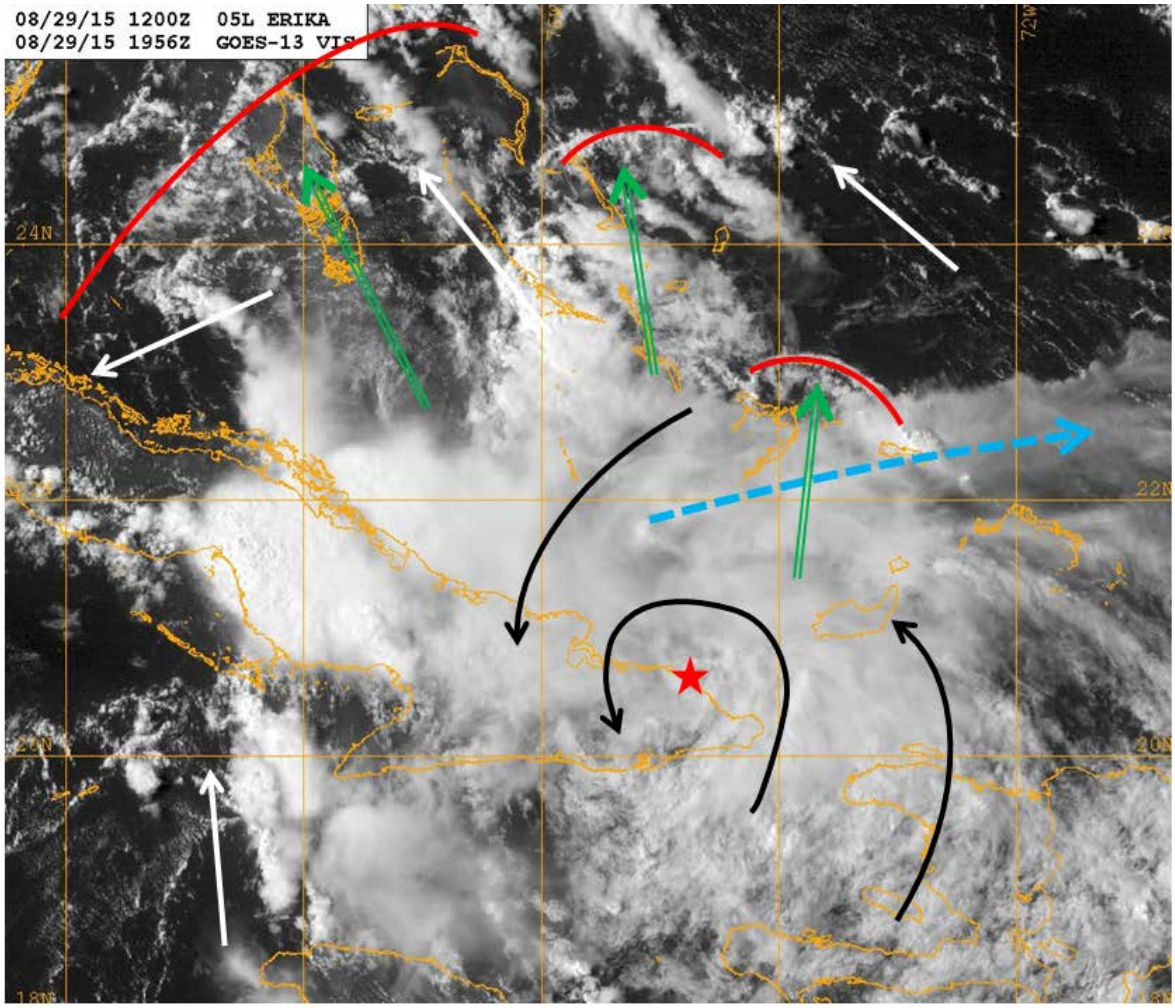
18	15	1930	15	1016	xx/xx	y	y	Removed lowermost winds
19	16	1943	16	1016	140/14	y	y	good drop
20	17	1954	17	1016	130/20	y	y	good drop
21	18	2005	18	1016	120/21	y	y	good drop
22	19	2018	19	1016	130/20	y	y	good drop
23	20	2026	20	1015	xx/xx	y	y	Removed lowermost winds
24	21	2054	21	1015	120/10	y	y	good drop



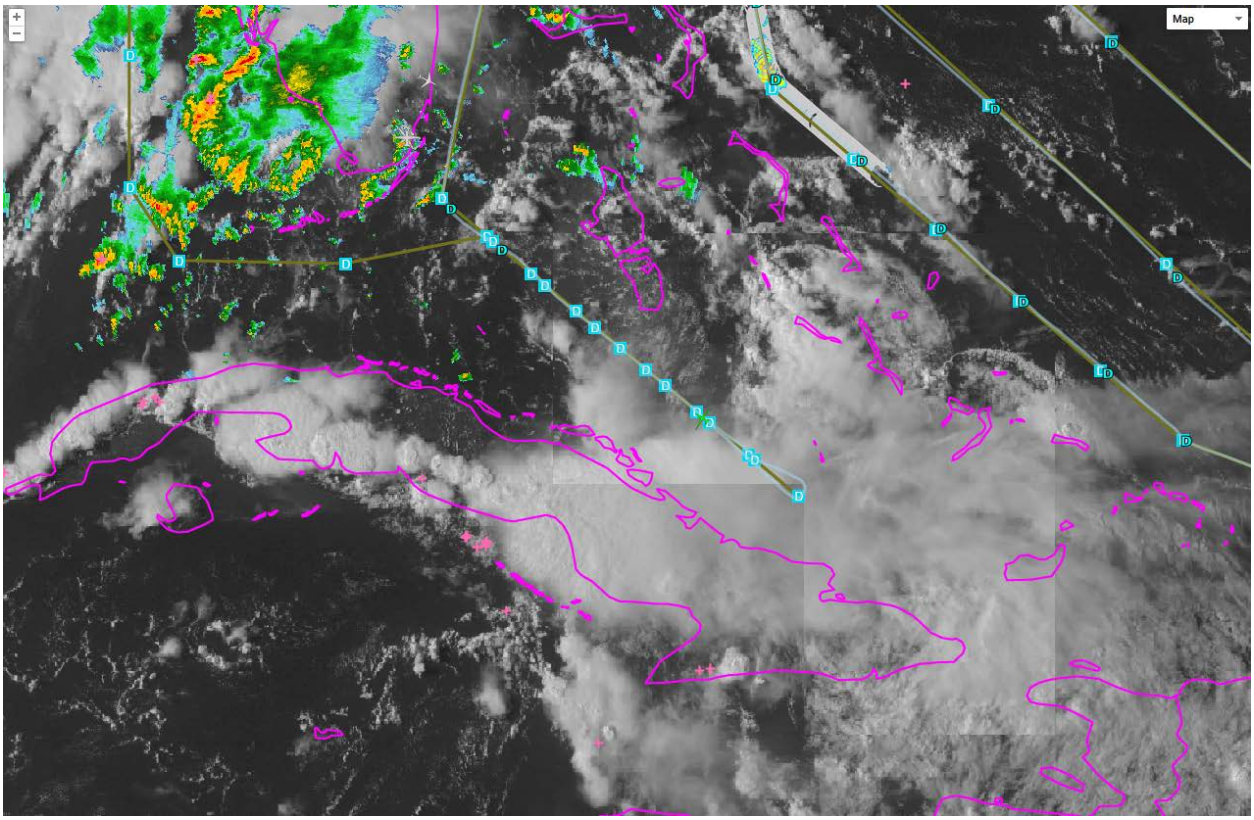


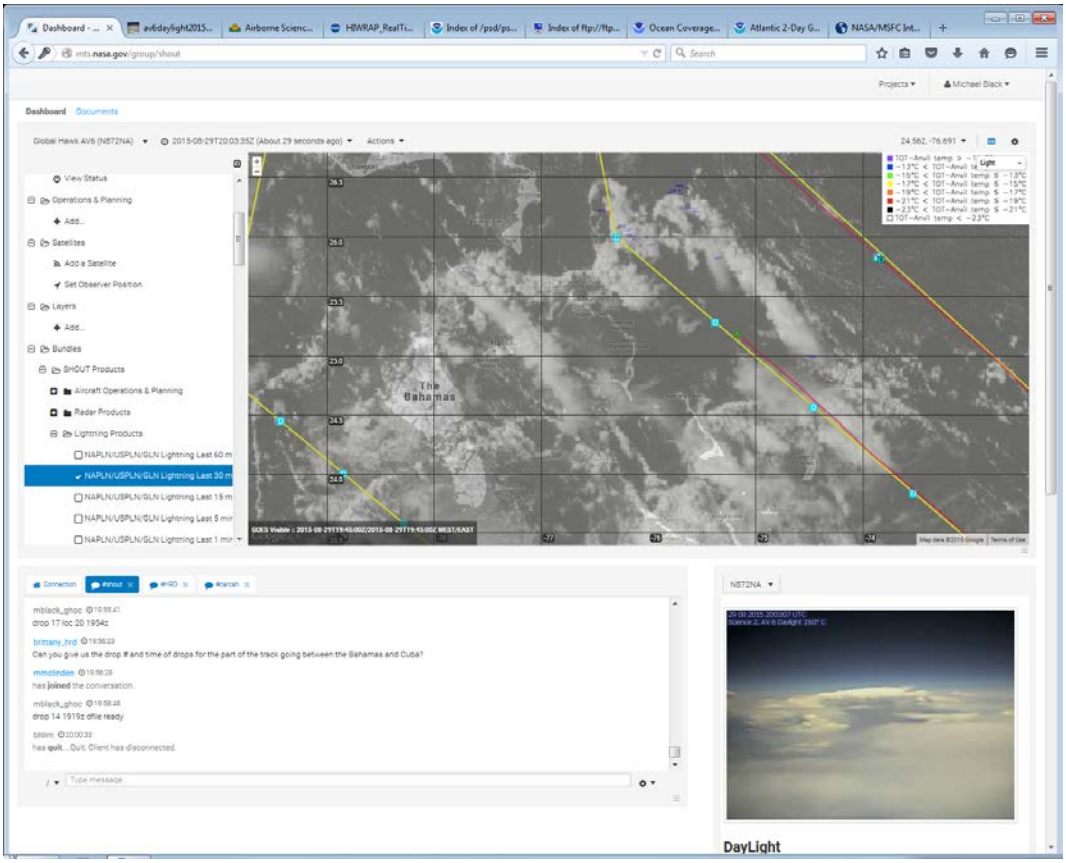
Drop 17 Loc 20 1954z

1956Z Schematic of flow circulation around mid-level vortex off Cuba SE coast. Gust fronts in red. Gust front motion in double green line. Low-level flow in white arrows. Mid-level flow around mid-level vortex in black. Low level vortex south of Andros on north coast of Cuba, fixed earlier by AF, nearly dissipated. red star indicated center of mid-level vortex. Dashed light blue line indicates outflow channel.



Mid-level vortex complex in MTS with GH flight track and sonde drop locations plus NWS radar:


Map


Dashboard
Documents
Global Hawk AV6 (N872NA)
Actions
View Status
Operations & Planning
Satellites
Add a Satellite
Set Observer Position
Layers
Bundles
SHOUT Products
Aircraft Operations & Planning
Radar Products
Lightning Products
NAPLN/USPLN/GLN Lightning Last 30 m
The Bahamas
drop 17 loc 20 19542
Can you give us the drop # and time of drops for the part of the track going between the Bahamas and Cuba?
has joined the conversation.
drop 14 1919z dfile ready
has quit... Quit: Client has disconnected.
N872NA
DayLight


29 08 2015 20:04:13 UTC
Science 2, AV-6 Daylight 19.0° C

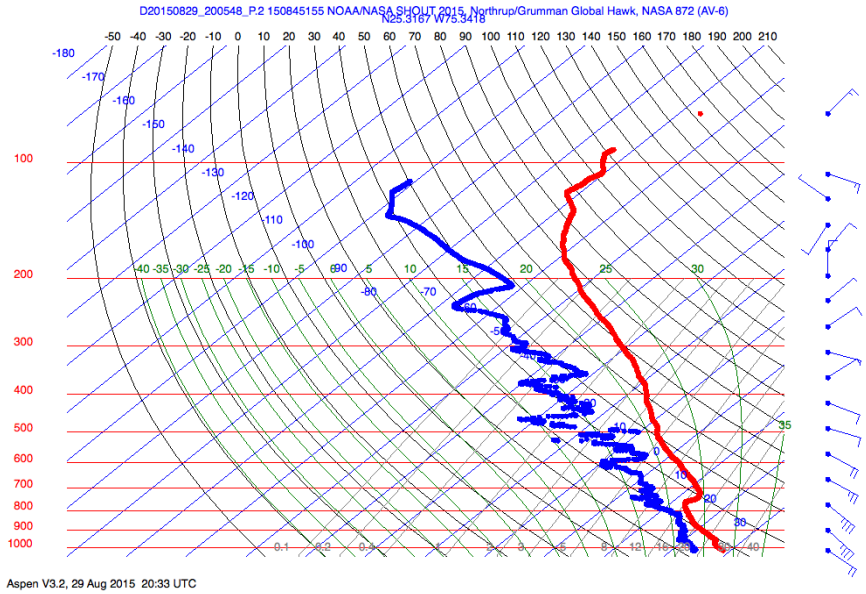

29 08 2015 20:08:30 UTC
Science 2, AV-6 Daylight 19.0° C


29 08 2015 20:08:55 UTC
Science 2, AV-6 Daylight 19.0° C


29 08 2015 20:09:46 UTC
Science 2, AV-6 Daylight 19.0° C


29 08 2015 20:10:28 UTC
Science 2, AV-6 Daylight 19.0° C

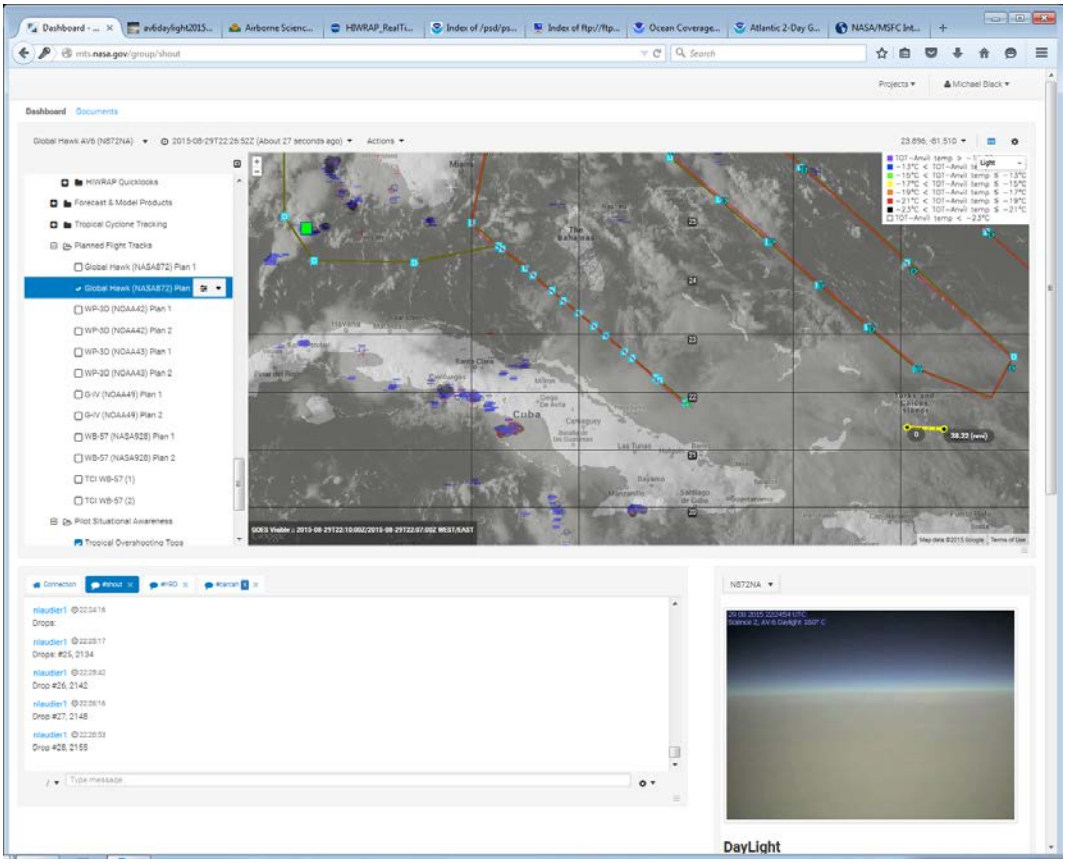

29 08 2015 20:12:05 UTC
Science 2, AV-6 Daylight 19.0° C



Drop 18 Loc 21 2005z

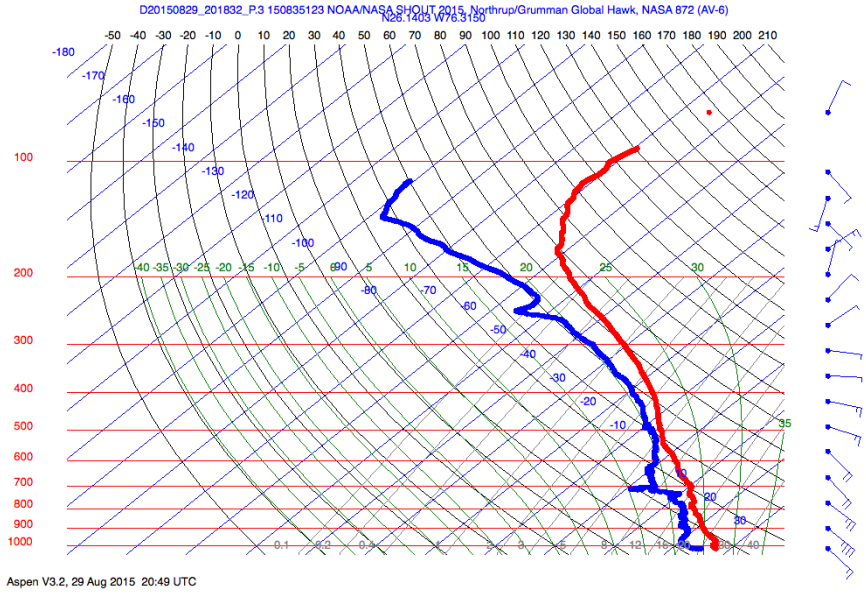

29 08 2015 20:13:56 UTC
Science 2, AV-6 Daylight 19.0° C


29 08 2015 20:15:08 UTC
Science 2, AV-6 Daylight 19.0° C

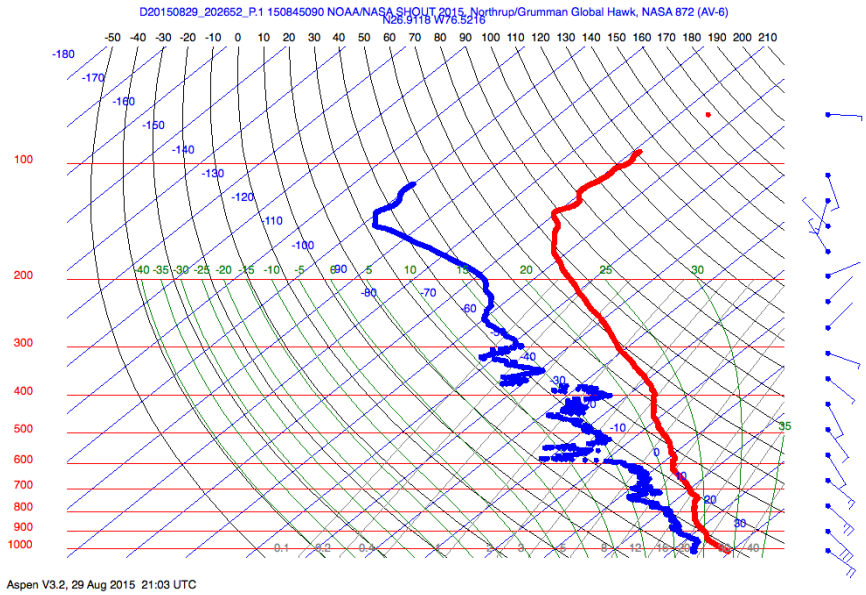


Tried to extend leg between Cuba and Bahamas to further SE but ATC would not allow it

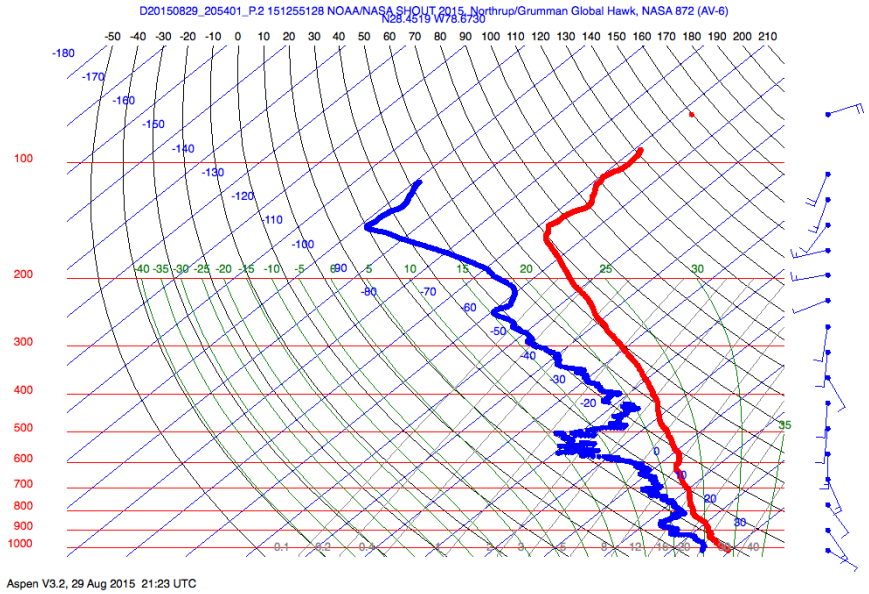
some issues with having the correct current.ftk on the Mac laptop



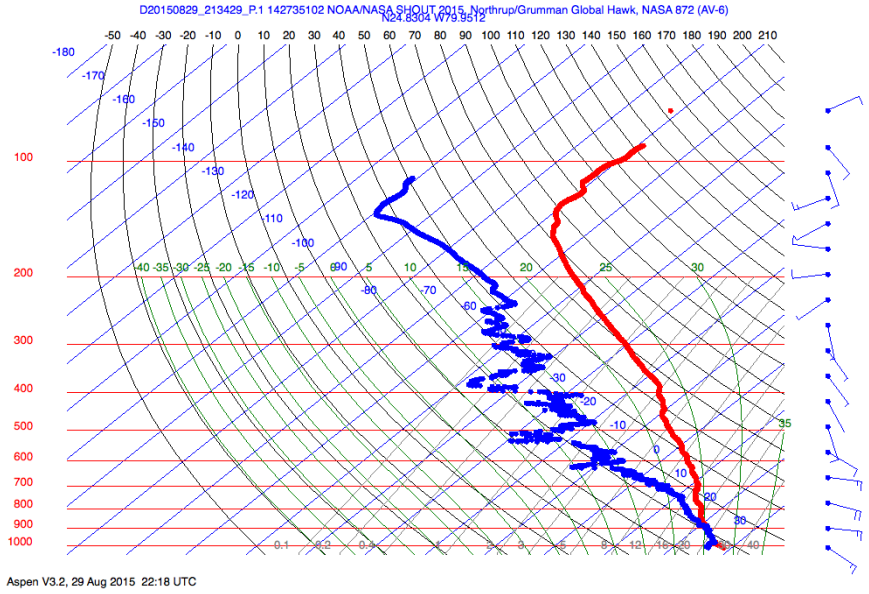
DROP 19 LOC 22 2018Z



DROP 20 LOC 23 2027Z

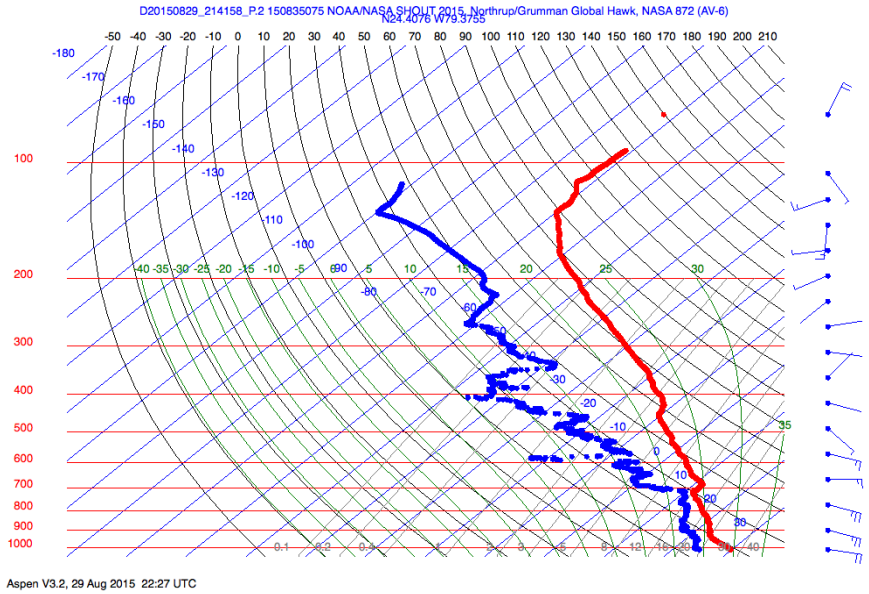


DROP 21 LOC 24 2054Z

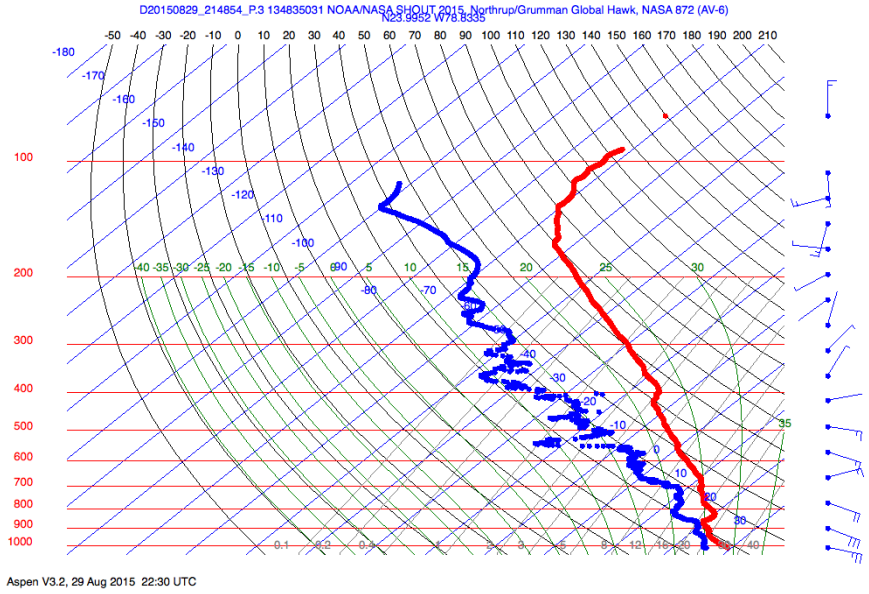


DROP 22 LOC 25 2134Z

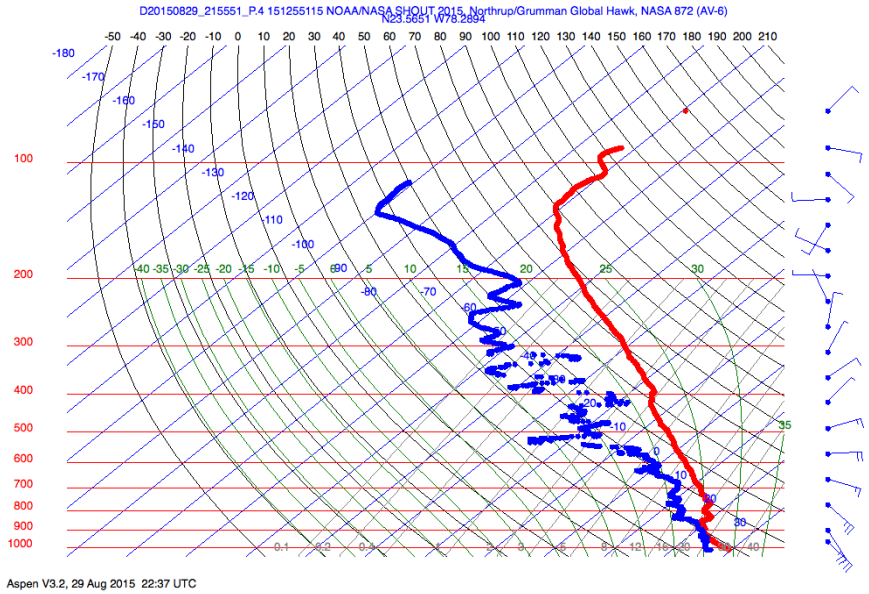
START OF LEG TO THE se ALONG THE COAST OF cUBA



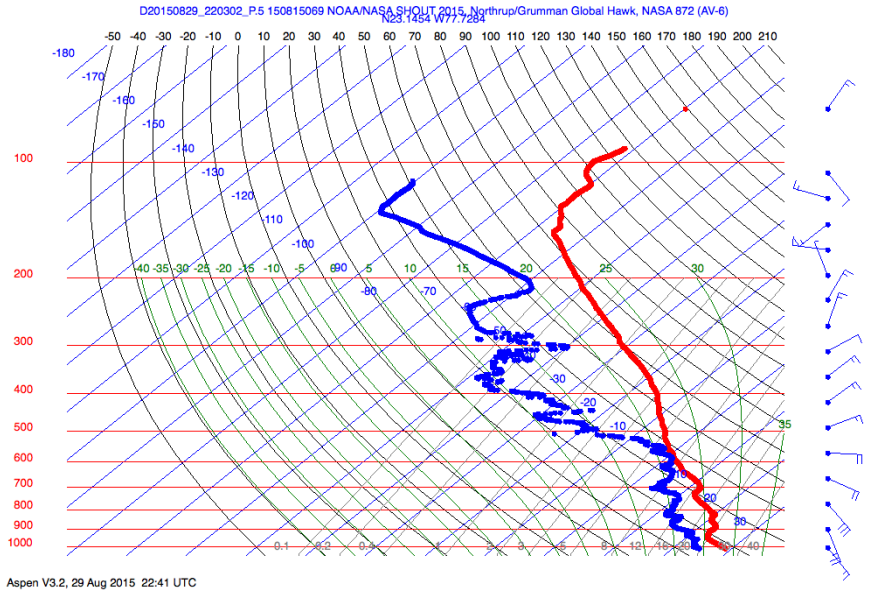
DROP 23 LOC 26 2142Z



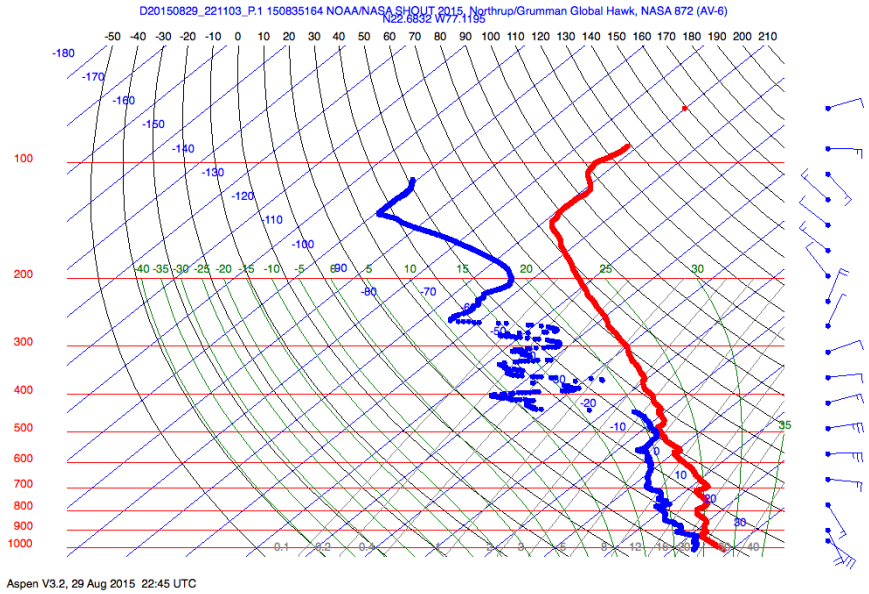
DROP 24 LOC 27 2148Z



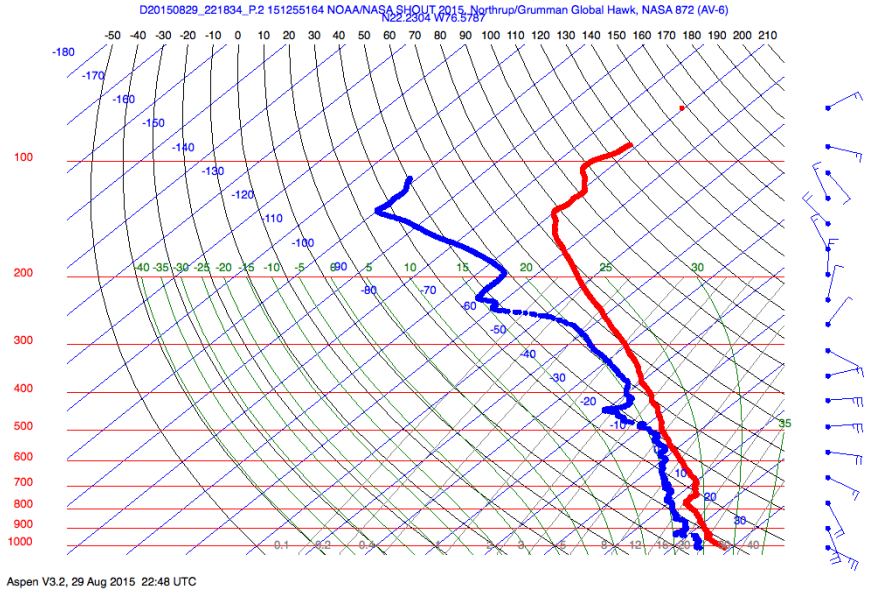
DROP 25 LOC 28 2155Z



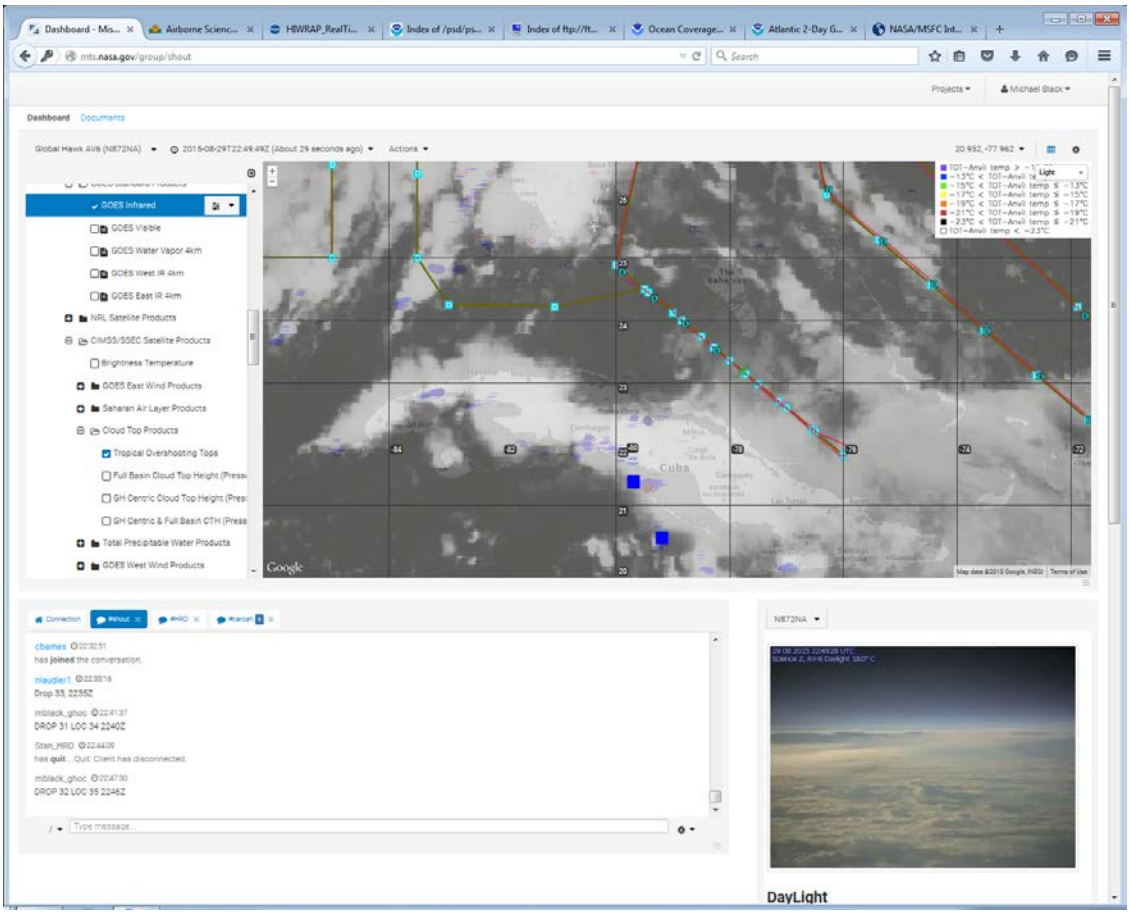
DROP 26 LOC 29 2203Z



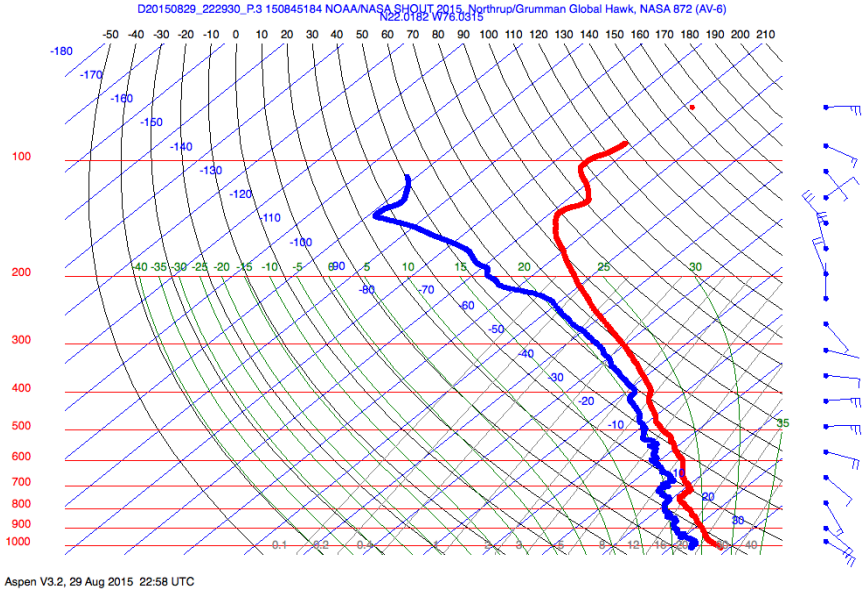
DROP 27 LOC 30 2210Z



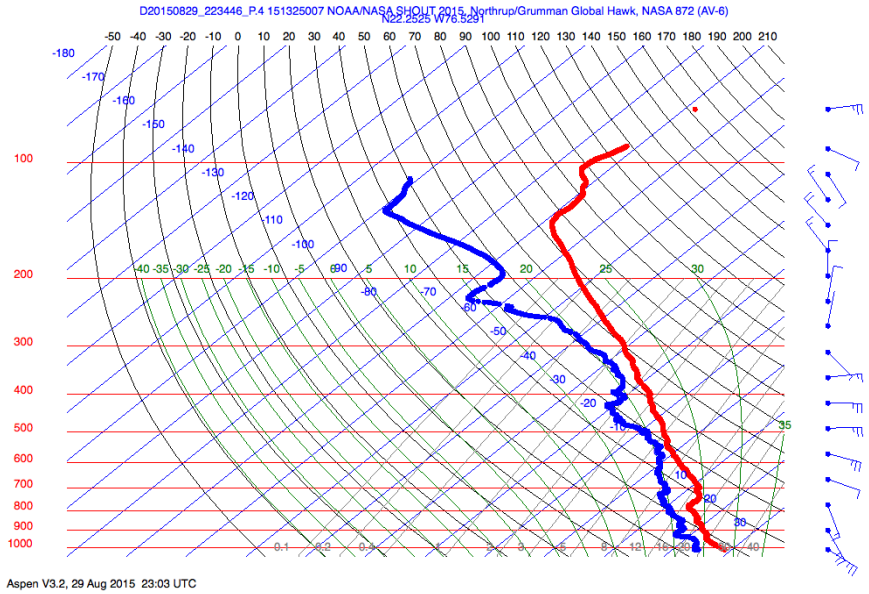
DROP 28 LOC 31 2218Z



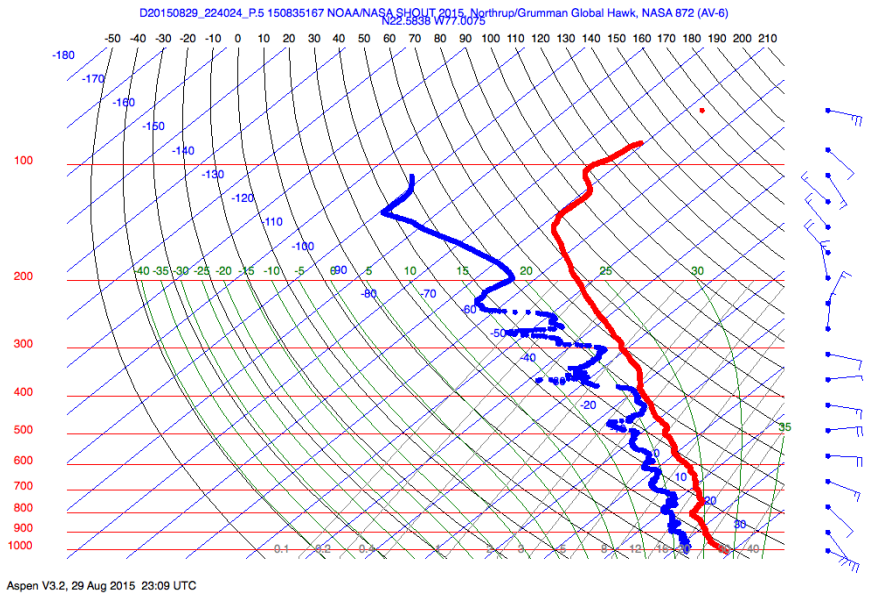
2226Z- se POINT 21.8 n 76w TURN AROUND FOR RECIPROCAL leg to NW



DROP 29 LOC 32 2229Z



DROP 30 LOC 33 2234Z



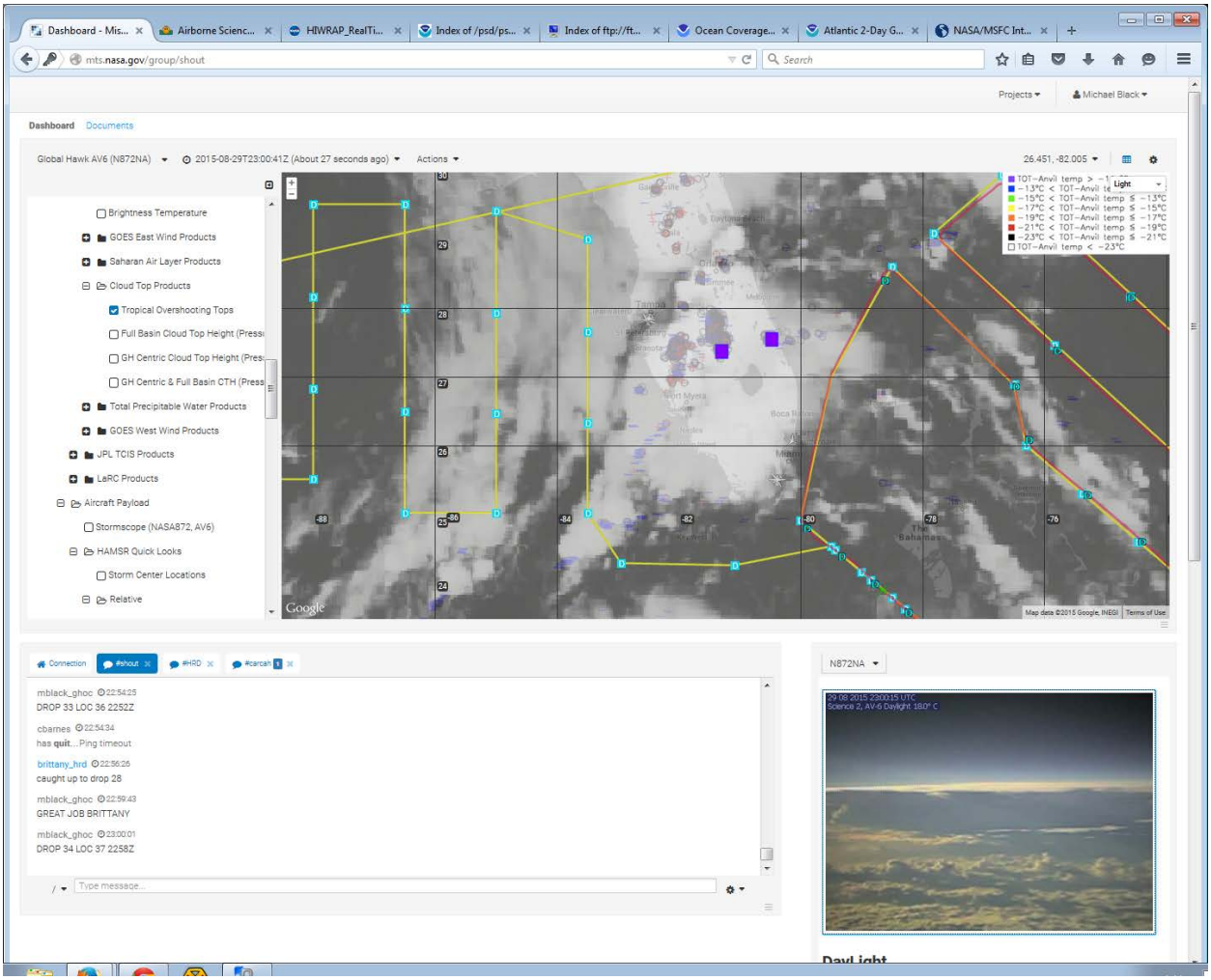
DROP 31 LOC 34 2240Z

DROP 32 LOC 35 2246Z

DROP 33 LOC 36 2252Z


29 08 2015 22:58:07 UTC
Science 2, AV-6 Daylight 18.0° C


29 08 2015 22:59:34 UTC
Science 2, AV-6 Daylight 18.0° C


Dashboard - Mis...
Airborne Scienc...
HIWRAP_RealTi...
Index of /psd/ps...
Index of ftp://ft...
Ocean Coverage...
Atlantic 2-Day G...
NASA/MSFC Int...
mts.nasa.gov/group/shout
Search
Projects
Michael Black
Dashboard
Documents
Global Hawk AV6 (N872NA)
2015-08-29T23:00:41Z (About 27 seconds ago)
Actions
26.451,-82.005
Brightness Temperature
GOES East Wind Products
Saharan Air Layer Products
Cloud Top Products
Tropical Overshooting Tops
Full Basin Cloud Top Height (Press
GH Centric Cloud Top Height (Pres
GH Centric & Full Basin CTH (Press
Total Precipitable Water Products
GOES West Wind Products
JPL TCIS Products
LaRC Products
Aircraft Payload
Stormscope (NASA872, AV6)
HAMSR Quick Looks
Storm Center Locations
Relative
TOT−Anvil temp > −13°C
−13°C < TOT−Anvil temp ≤ −15°C
−15°C < TOT−Anvil temp ≤ −17°C
−17°C < TOT−Anvil temp ≤ −19°C
−19°C < TOT−Anvil temp ≤ −21°C
−21°C < TOT−Anvil temp ≤ −23°C
TOT−Anvil temp < −23°C
Light
Google
Map data ©2015 Google, INEGI
Terms of Use
Connection
#shout
#HRD
#caricah
mblack_ghoc 22:54:25
DROP 33 LOC 36 2252Z
cbarnes 22:54:34
has quit...Ping timeout
brittany_hrd 22:56:26
caught up to drop 28
mblack_ghoc 22:59:43
GREAT JOB BRITTANY
mblack_ghoc 23:00:01
DROP 34 LOC 37 2258Z
Type message...
N872NA
29 08 2015 230015 UTC
Science 2, AV-6 Daylight 18.0° C
Daylight


29 08 2015 23:02:00 UTC
Science 2, AV-6 Daylight 18.0° C


29 08 2015 23:02:45 UTC
Science 2, AV-6 Daylight 18.0° C

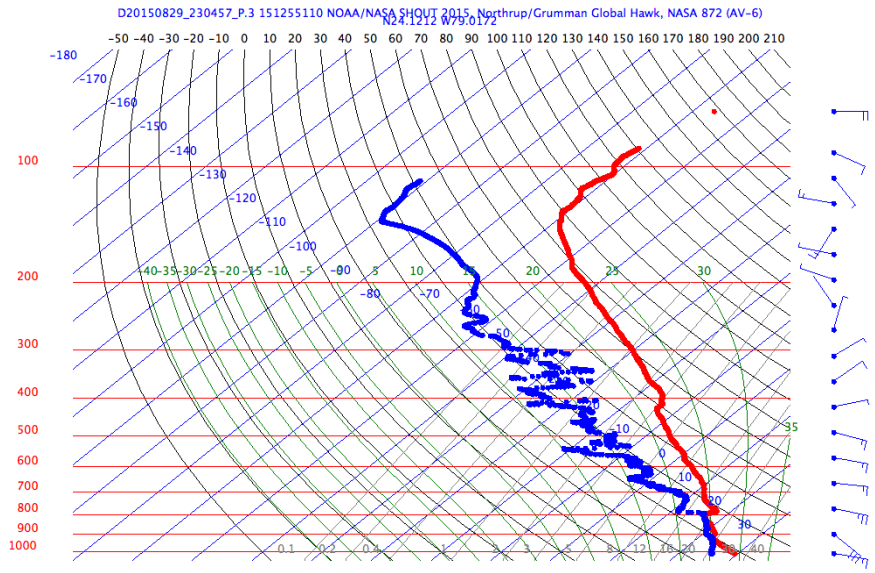

29 08 2015 23:04:10 UTC
Science 2, AV-6 Daylight 18.0° C


29 08 2015 23:05:14 UTC
Science 2, AV-6 Daylight 18.0° C

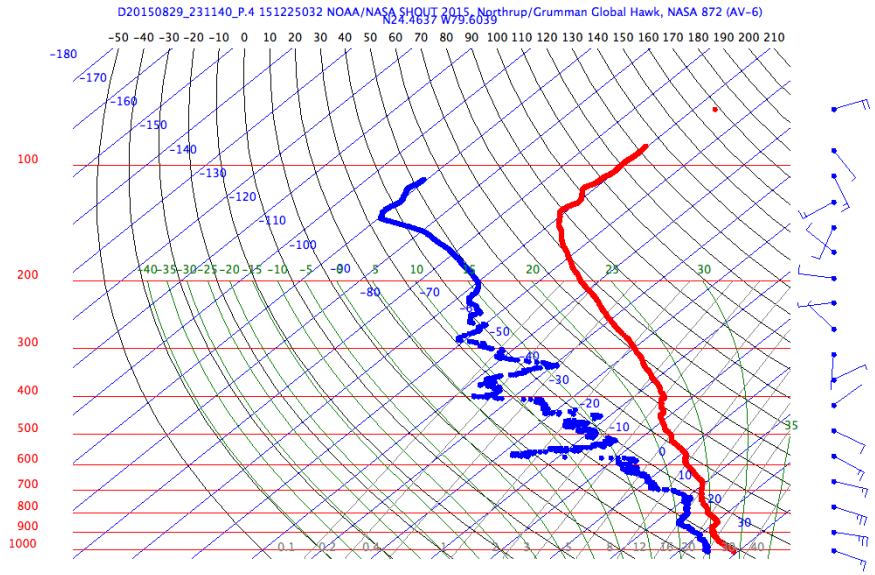

29 08 2015 23:11:23 UTC
Science 2, AV-6 Daylight 18.0° C


29 08 2015 23:07:44 UTC
Science 2, AV-6 Daylight 18.0° C

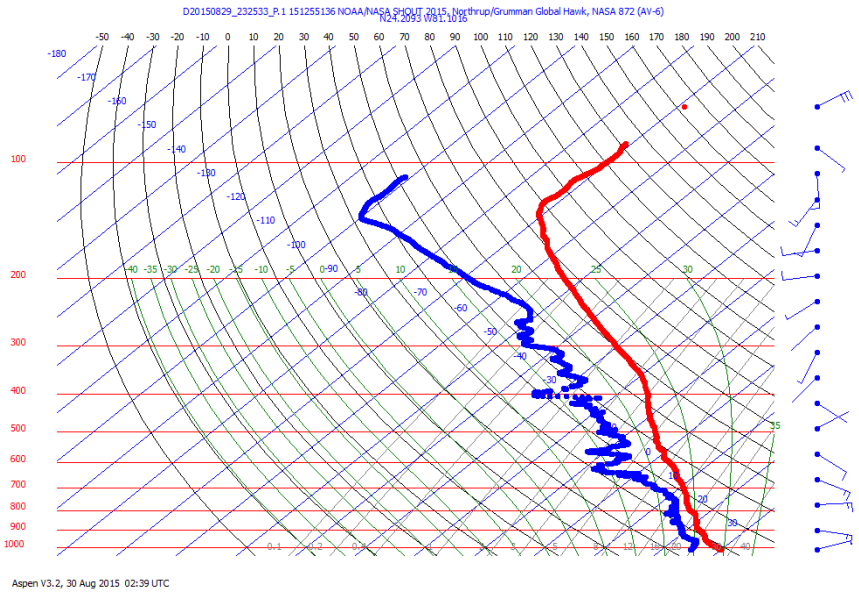
DROP 34 LOC 37 2258Z



DROP 35 LOC 38 2304Z



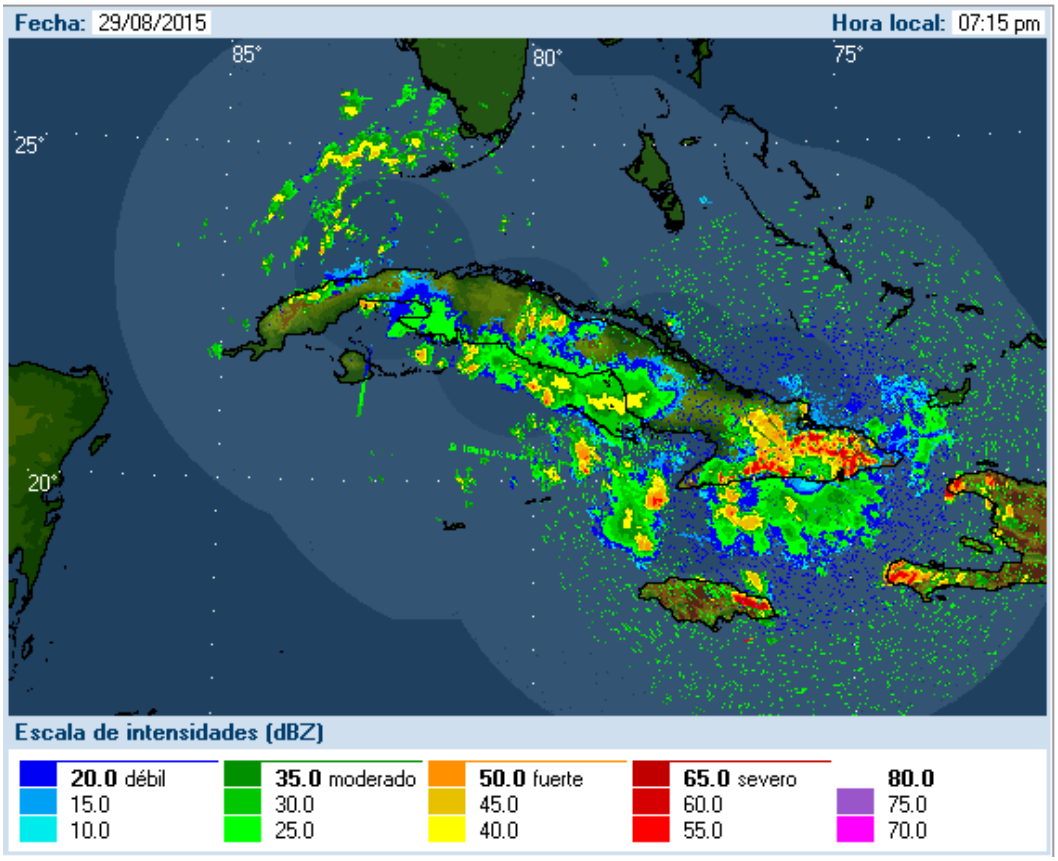
DROP 36 LOC 39 2311Z



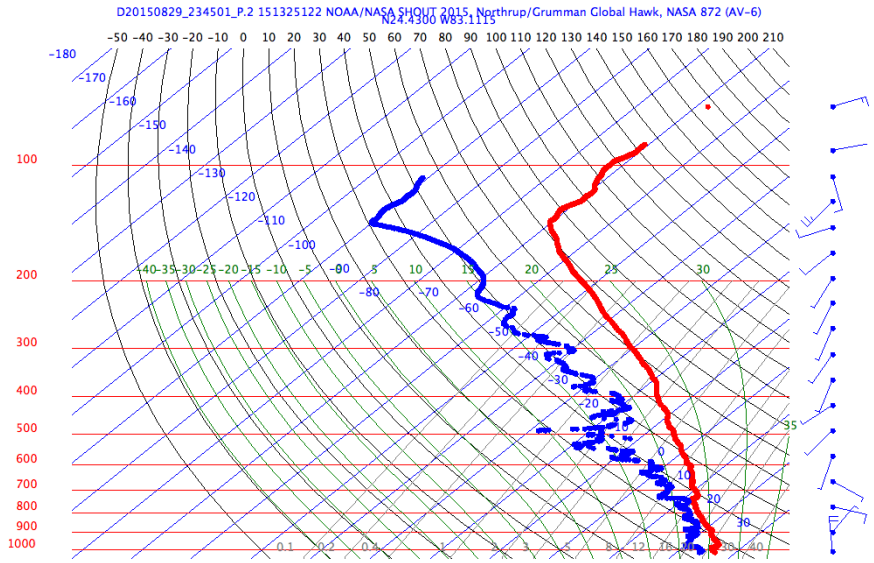
DROP 37 LOC 40 2325Z

2311z FINISHED se-nw LEG - HEADING THROUGH FLORIDA STRAITS

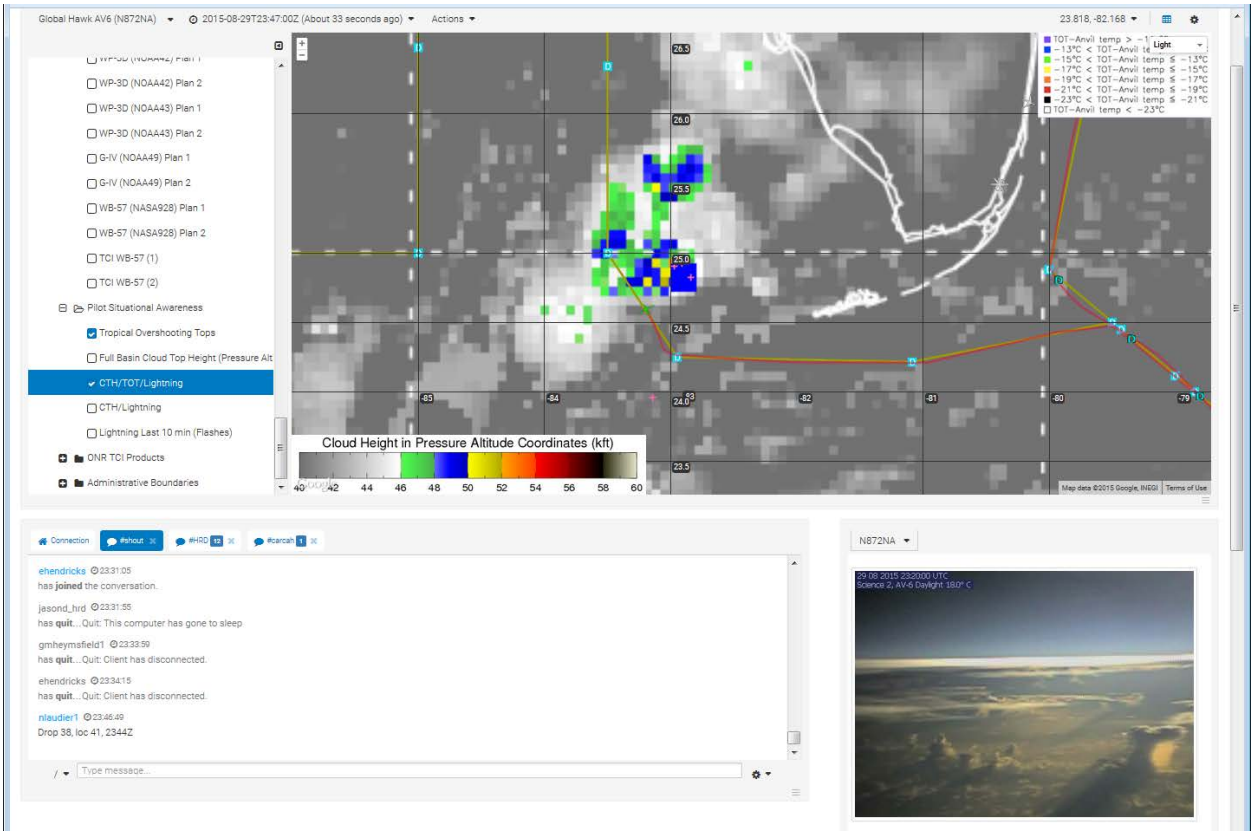

29 08 2015 23:20:00 UTC
Science 2, AV-6 Daylight 18.0° C

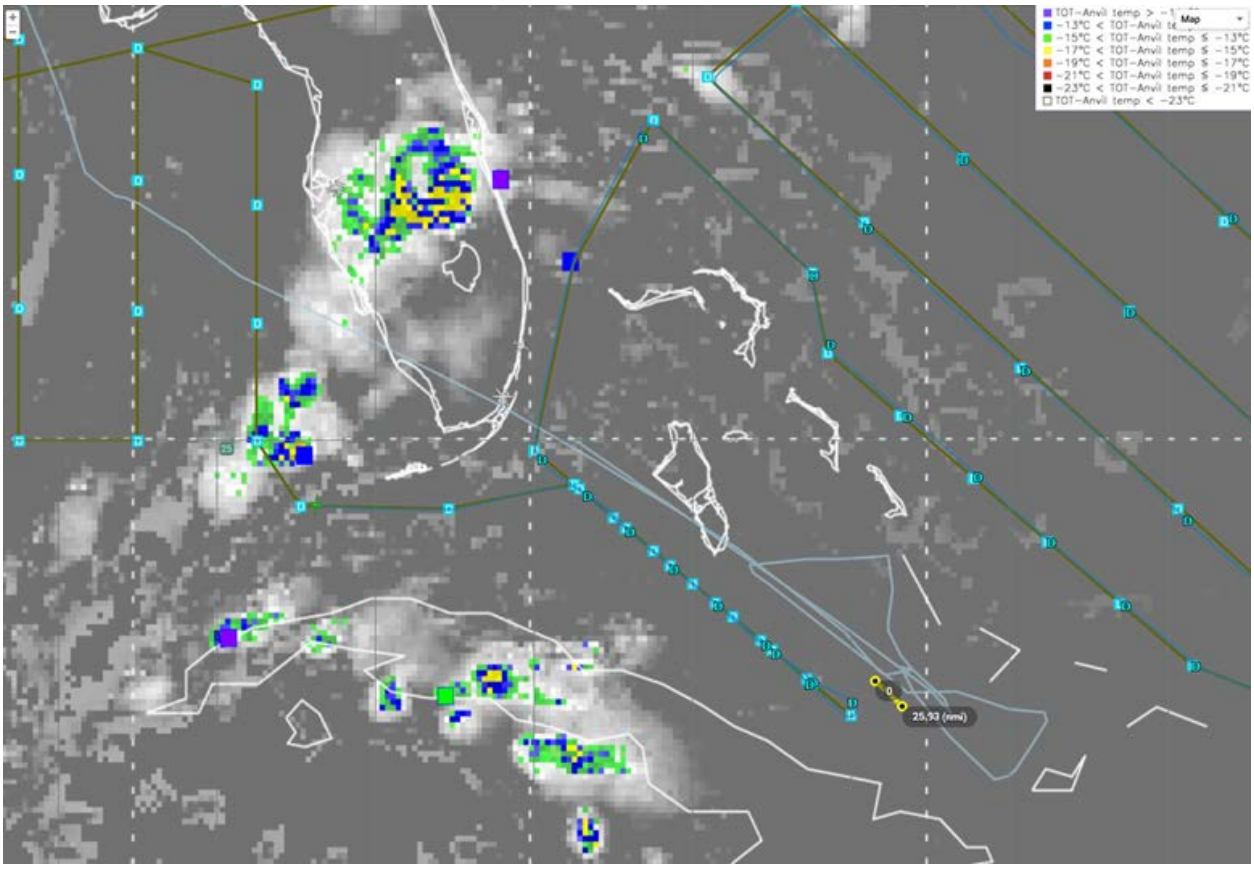

Fecha: 29/08/2015
Hora local: 07:15 pm
85°
80°
75°
25°
20°
Escala de intensidades (dBZ)
20.0 débil
15.0
10.0
35.0 moderado
30.0
25.0
50.0 fuerte
45.0
40.0
65.0 severo
60.0
55.0
80.0
75.0
70.0

Cuban radar composite 2315Z showing sea breeze thunderstorm development along the south coast west of the former-Erika mid-level vortex and curved band east of mid-level vortex center off eastern tip of Cuba.

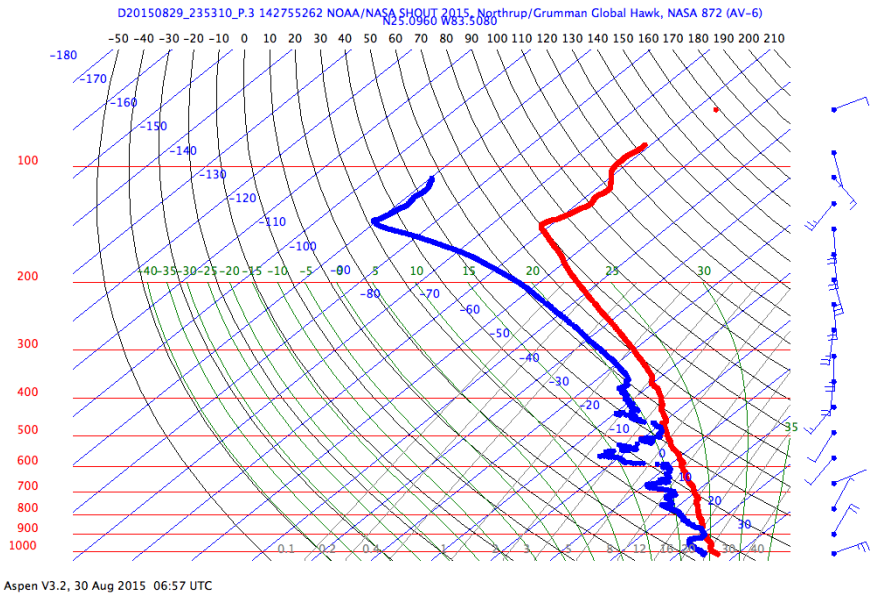


DROP 38 LOC 41 2344Z



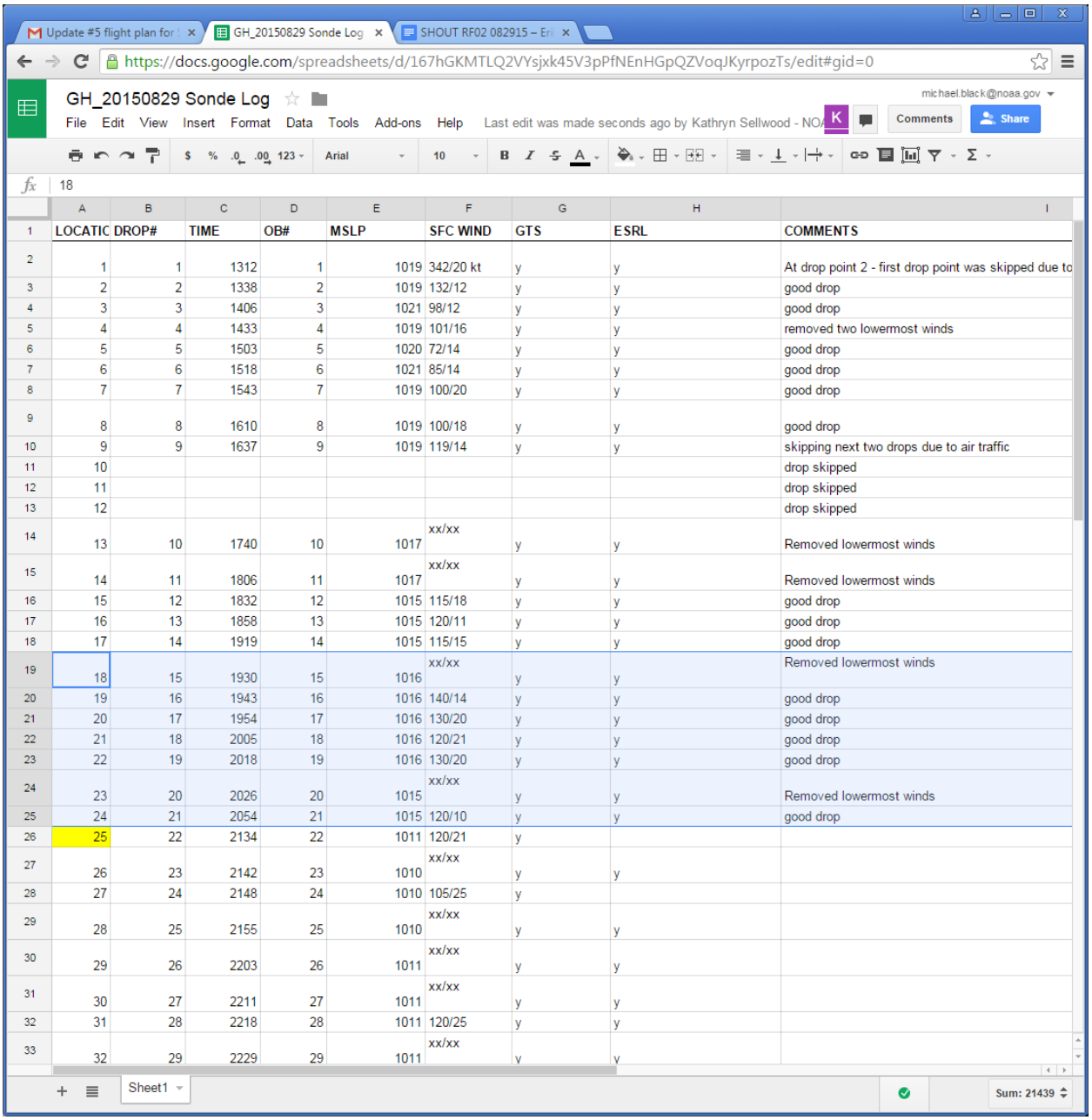


Overshooting tops Aug 29, 2344Z



drop 39 LOC 42 2353Z

KU WILL BE DOWN FOR ABOUT AN HOUR WHILE THE ANTENNA IS REPOINTED



Update #5 flight plan for | GH_20150829 Sonde Log | SHOUT RF02 082915 – Eri

https://docs.google.com/spreadsheets/d/167hGKMTLQ2VYsjxk45V3pPfNEnHGpQZVoqJKyrpozTs/edit#gid=0

GH_20150829 Sonde Log

File Edit View Insert Format Data Tools Add-ons Help Last edit was made seconds ago by Kathryn Sellwood - NOA

michael.black@noaa.gov

Comments Share

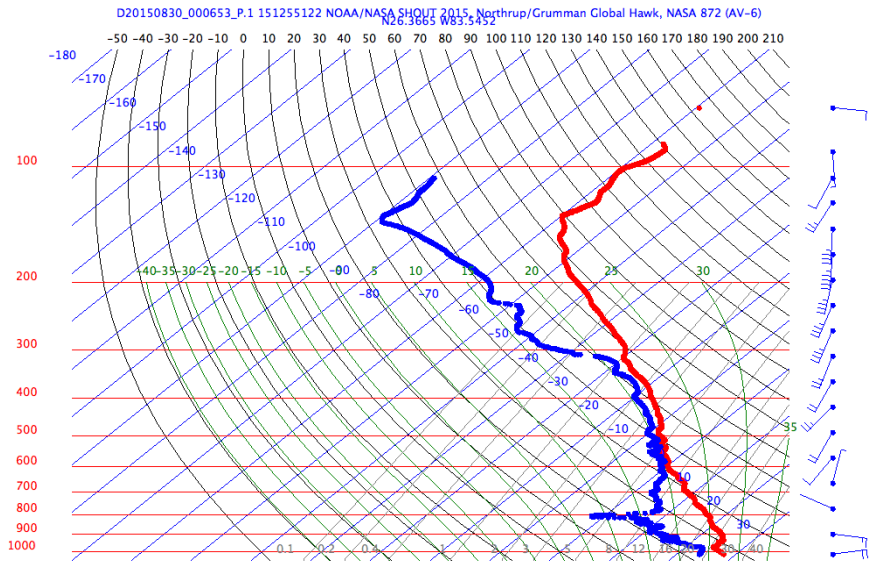
Arial 10

fx 18

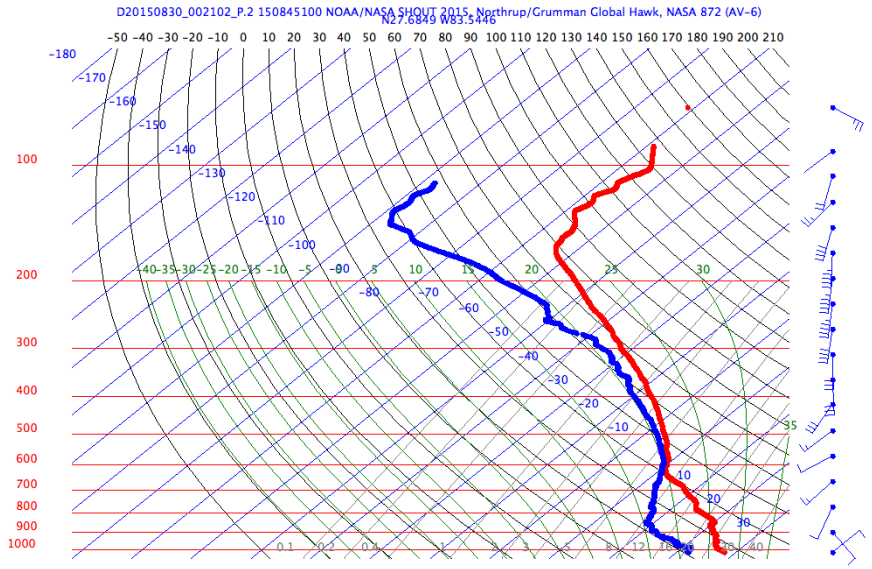
	A	B	C	D	E	F	G	H	I
1	LOCATIC	DROP#	TIME	OB#	MSLP	SFC WIND	GTS	ESRL	COMMENTS
2	1	1	1312	1	1019	342/20 kt	y	y	At drop point 2 - first drop point was skipped due to
3	2	2	1338	2	1019	132/12	y	y	good drop
4	3	3	1406	3	1021	98/12	y	y	good drop
5	4	4	1433	4	1019	101/16	y	y	removed two lowermost winds
6	5	5	1503	5	1020	72/14	y	y	good drop
7	6	6	1518	6	1021	85/14	y	y	good drop
8	7	7	1543	7	1019	100/20	y	y	good drop
9	8	8	1610	8	1019	100/18	y	y	good drop
10	9	9	1637	9	1019	119/14	y	y	skipping next two drops due to air traffic
11	10								drop skipped
12	11								drop skipped
13	12								drop skipped
14	13	10	1740	10	1017	xx/xx	y	y	Removed lowermost winds
15	14	11	1806	11	1017	xx/xx	y	y	Removed lowermost winds
16	15	12	1832	12	1015	115/18	y	y	good drop
17	16	13	1858	13	1015	120/11	y	y	good drop
18	17	14	1919	14	1015	115/15	y	y	good drop
19	18	15	1930	15	1016	xx/xx	y	y	Removed lowermost winds
20	19	16	1943	16	1016	140/14	y	y	good drop
21	20	17	1954	17	1016	130/20	y	y	good drop
22	21	18	2005	18	1016	120/21	y	y	good drop
23	22	19	2018	19	1016	130/20	y	y	good drop
24	23	20	2026	20	1015	xx/xx	y	y	Removed lowermost winds
25	24	21	2054	21	1015	120/10	y	y	good drop
26	25	22	2134	22	1011	120/21	y		
27	26	23	2142	23	1010	xx/xx	y	y	
28	27	24	2148	24	1010	105/25	y		
29	28	25	2155	25	1010	xx/xx	y	y	
30	29	26	2203	26	1011	xx/xx	y	y	
31	30	27	2211	27	1011	xx/xx	y	y	
32	31	28	2218	28	1011	120/25	y	y	
33	32	29	2229	29	1011	xx/xx	y	y	

Sheet1

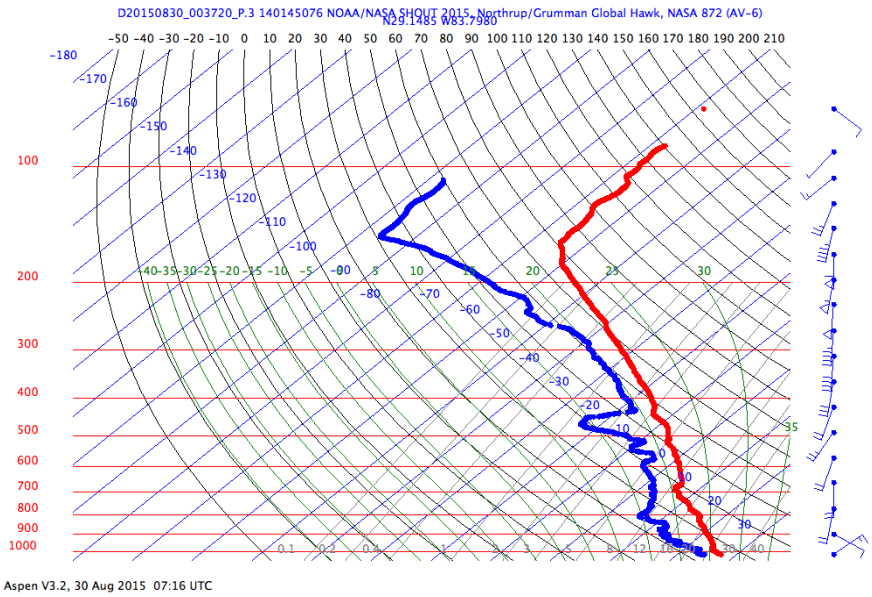
Sum: 21439



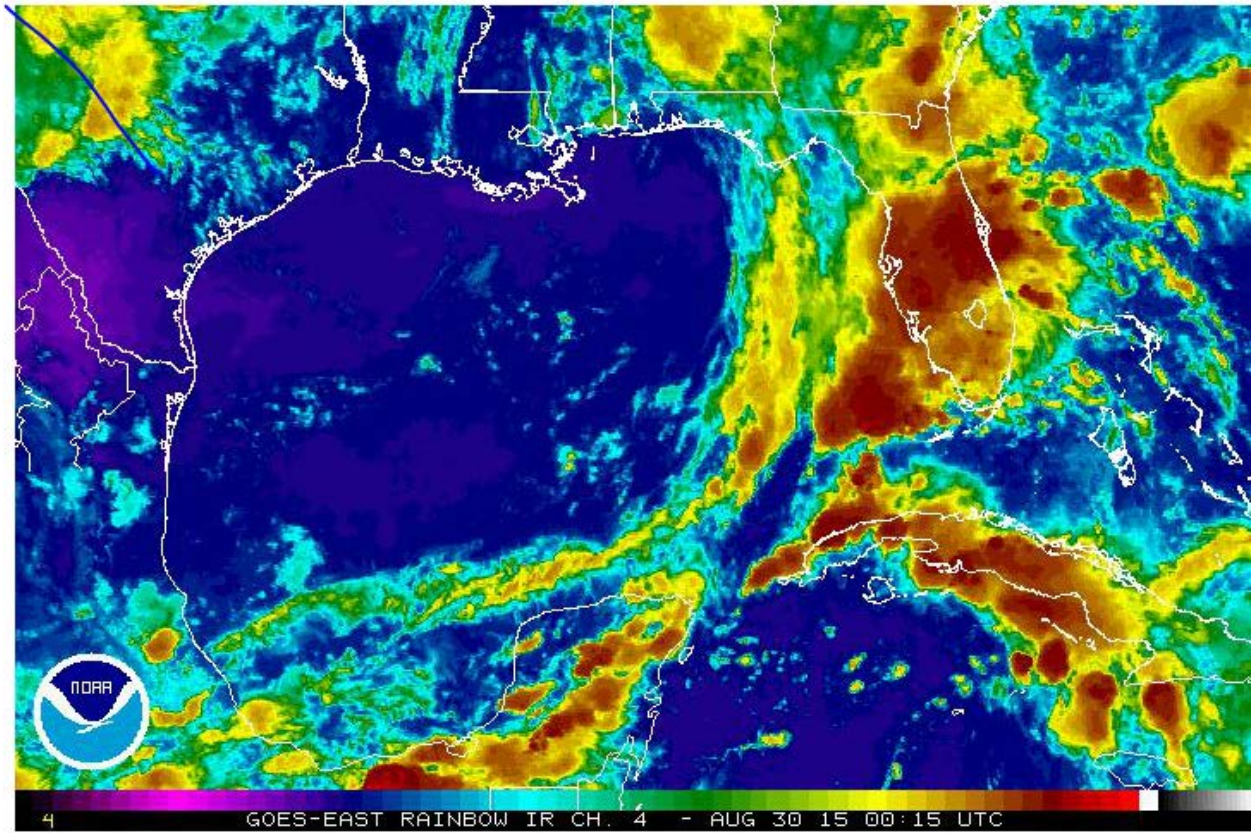
DROP 40 LOC 43 0007Z



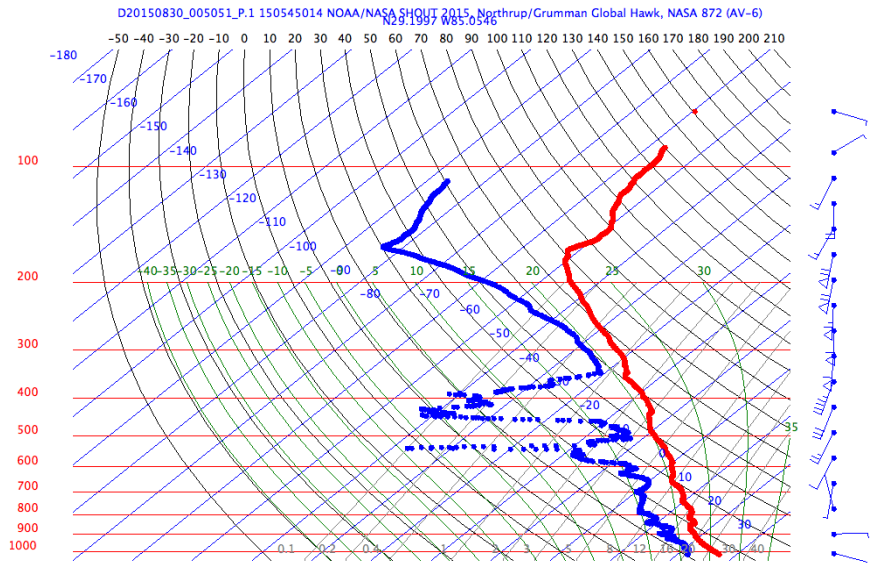
DROP 41 LOC 44 0021Z



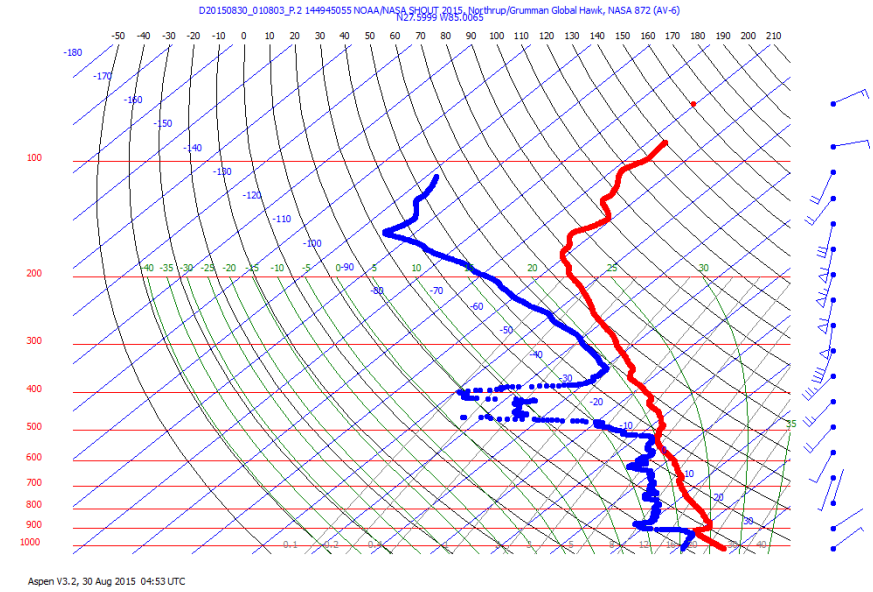
DROP 42 LOC 45 0037Z



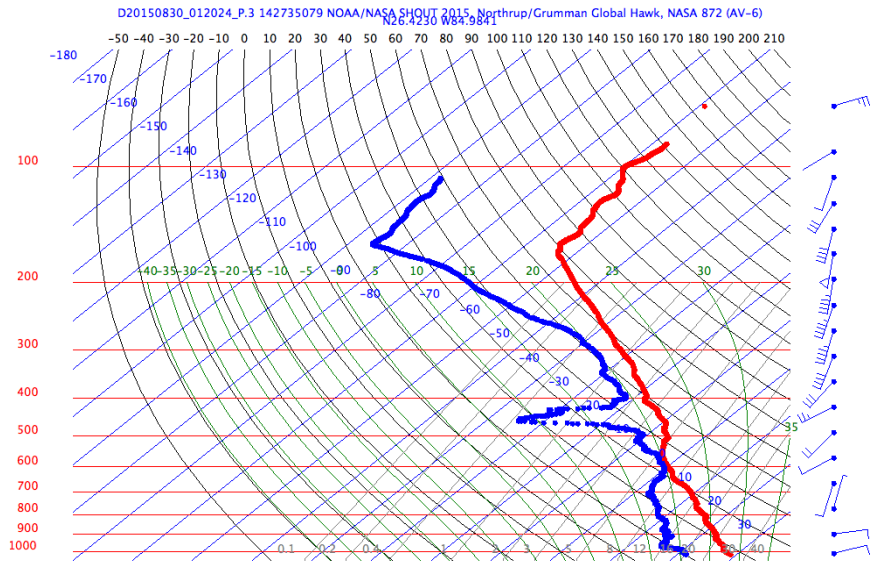
Current IR image



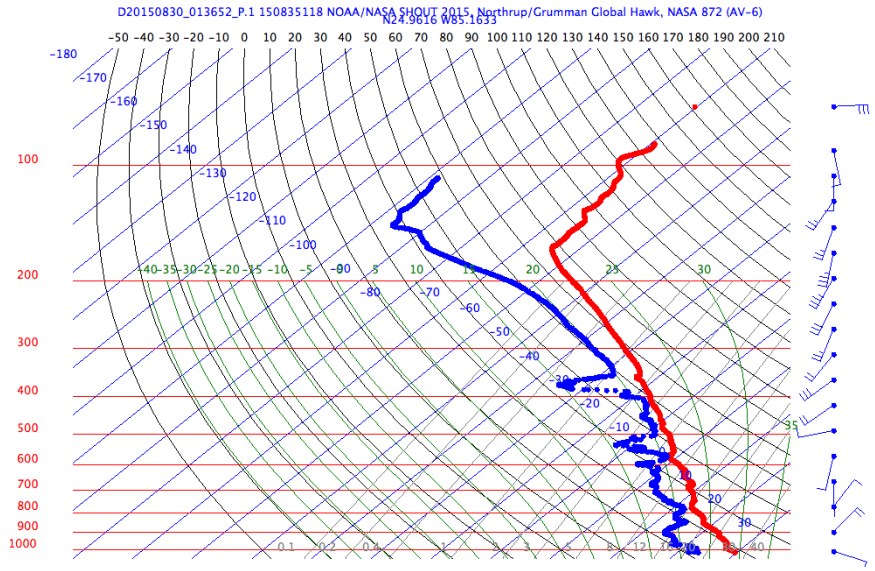
DROP 43 LOC 46 0050Z



DROP 44 29 nm south of LOC 47 0107Z



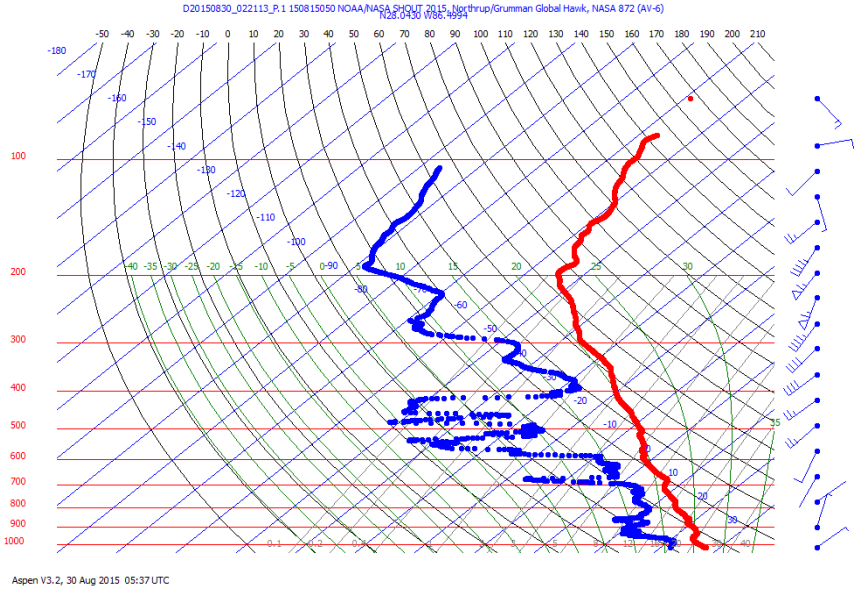
DROP 45 LOC 48 0120Z



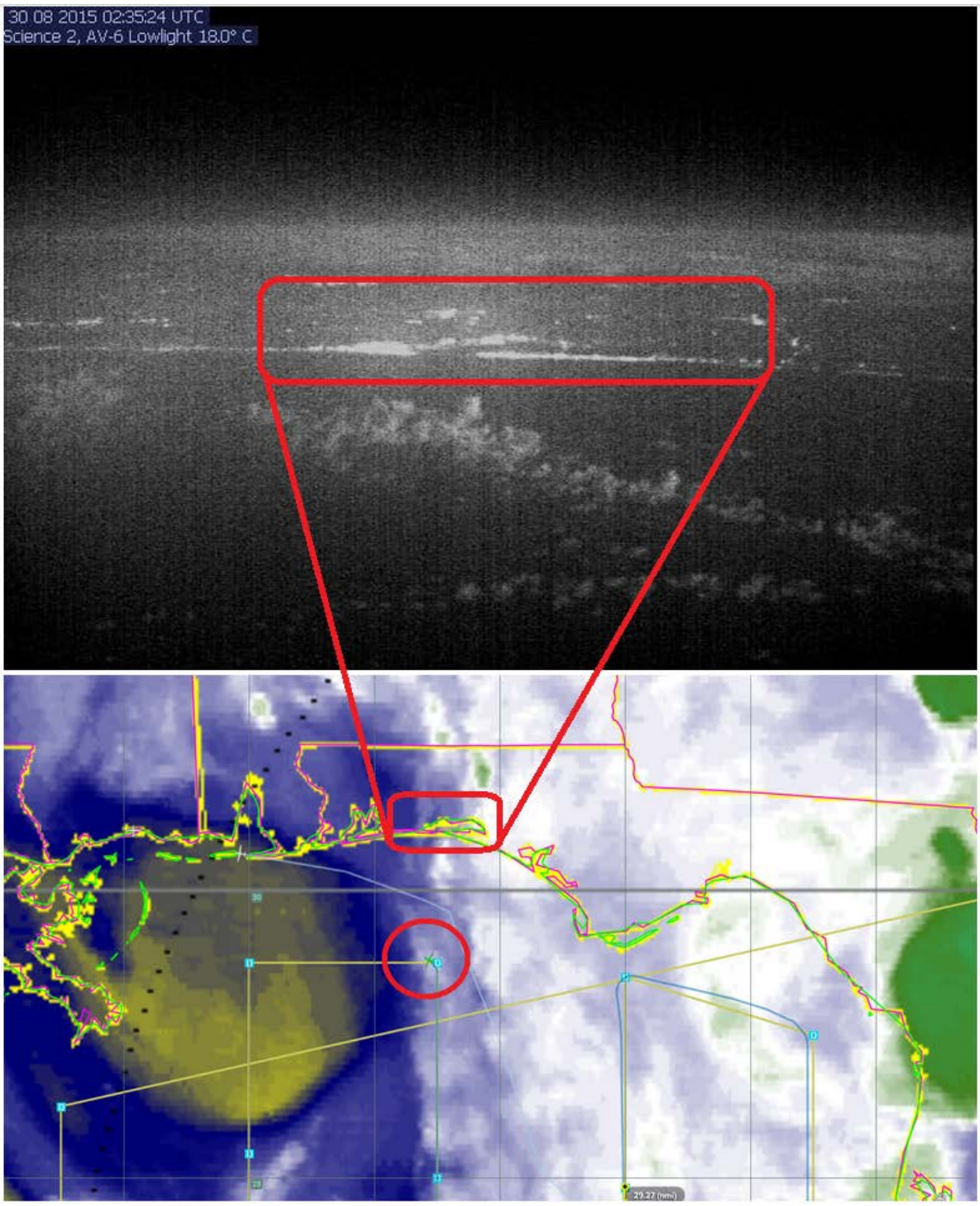
DROP 46 LOC 49 0136Z

DROP 47 LOC 50 0150Z

DROP 48 LOC 51 0205Z



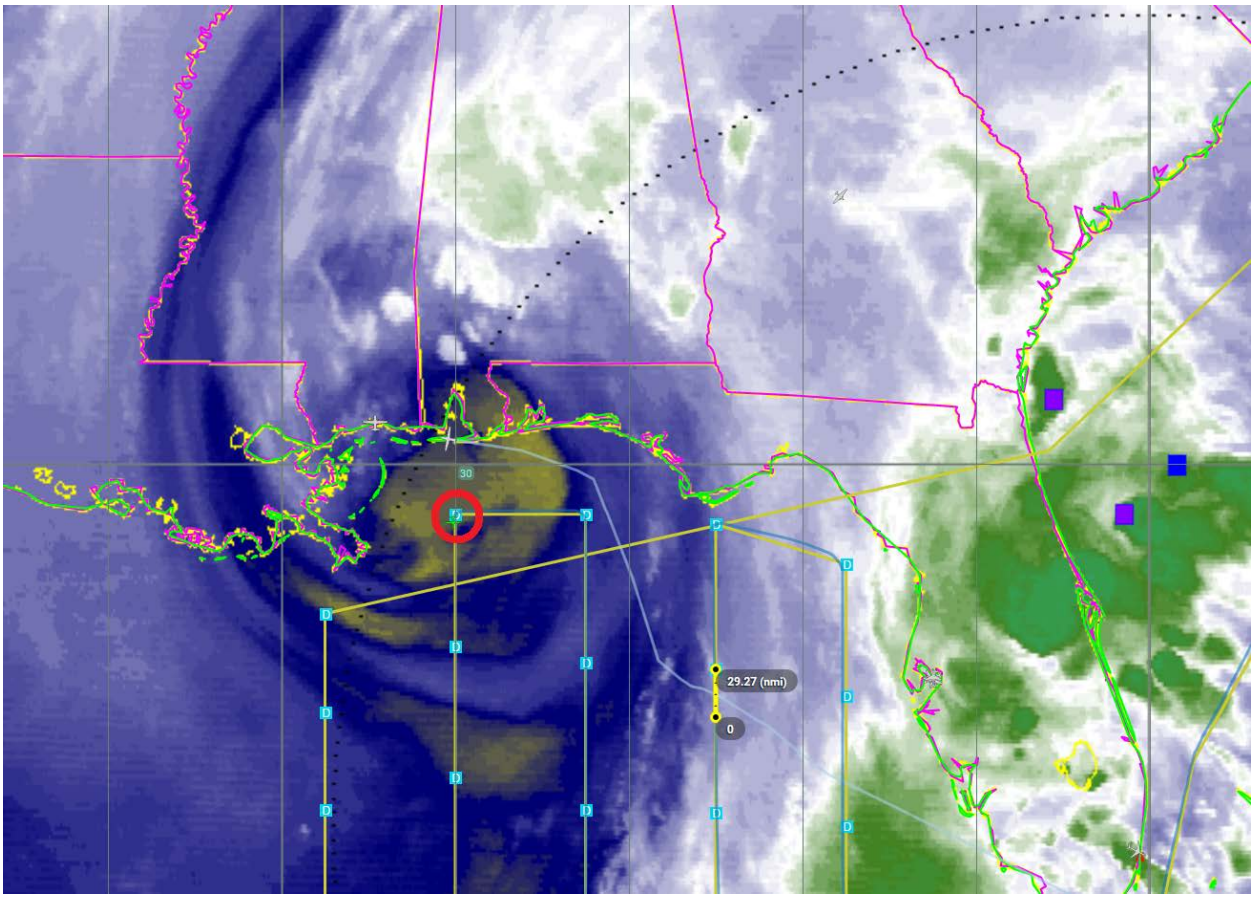
DROP 49 LOC 52 0221Z



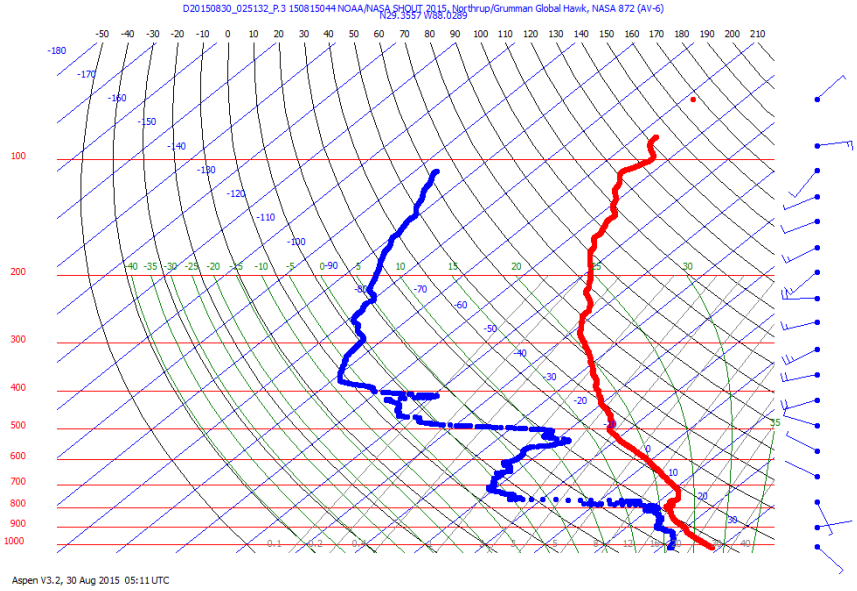
0235z: View of coastline and city lights from AV-6 LowLight camera, looking toward Destin, FL (above-top). The image was captured just before the Global Hawk was about to make a westward turn in the lawnmower pattern over the northern Gulf of Mexico (above-bottom). Even though there is no over-storm component to the RF02 mission, a crucial part of the forecast for the potential development and path of the remnants of Erika (presently just north of the Cuban

coastline, with potential to redevelop into TS “Fred” within the next 48 hours), hinges on the NWP models’ initialization and handling of the large cut-off upper Low to the south of Mobile, AL. The next AVAPS sonde drop in this pattern will help to determine the atmospheric profile within the center lobe of this synoptic feature.

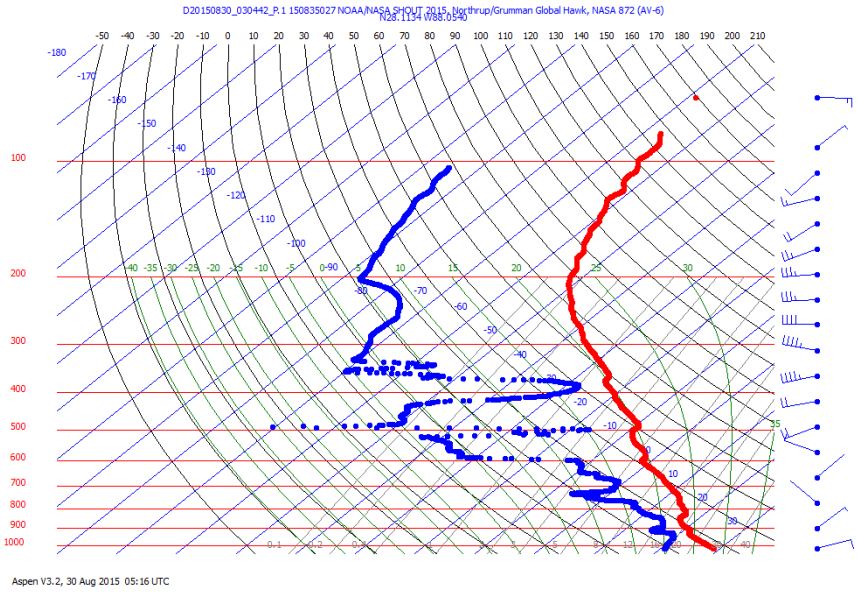
DROP 50 LOC 53 0237Z



0251z: AVAPS drop at turn in center of upper Low over northern Gulf.



DROP 51 LOC 54 0251Z



DROP 52 LOC 55 0304Z

DROP 53 LOC 56 0318Z

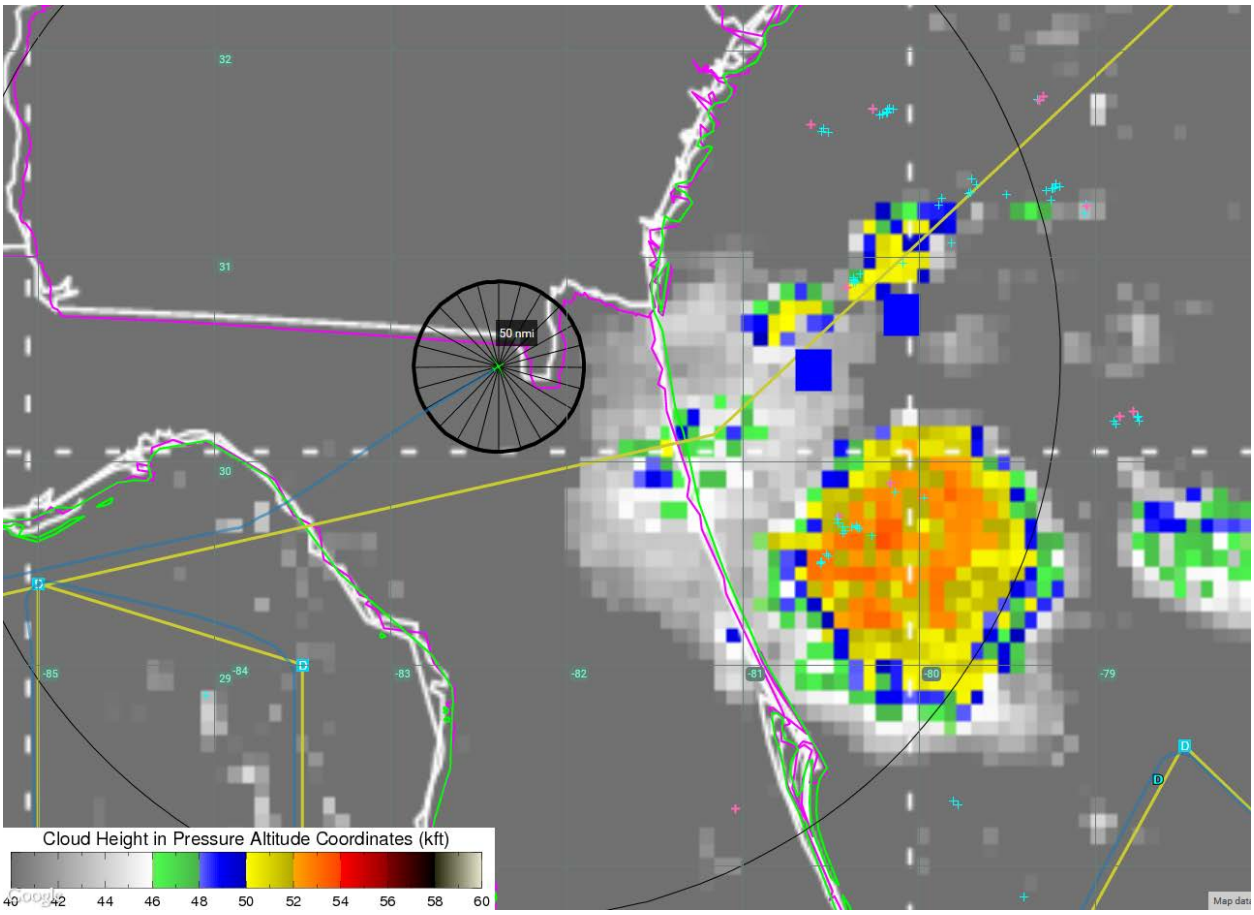
DROP 54 LOC 57 0333Z

DROP 55 LOC 58 0347Z

DROP 56 LOC 59 0355Z

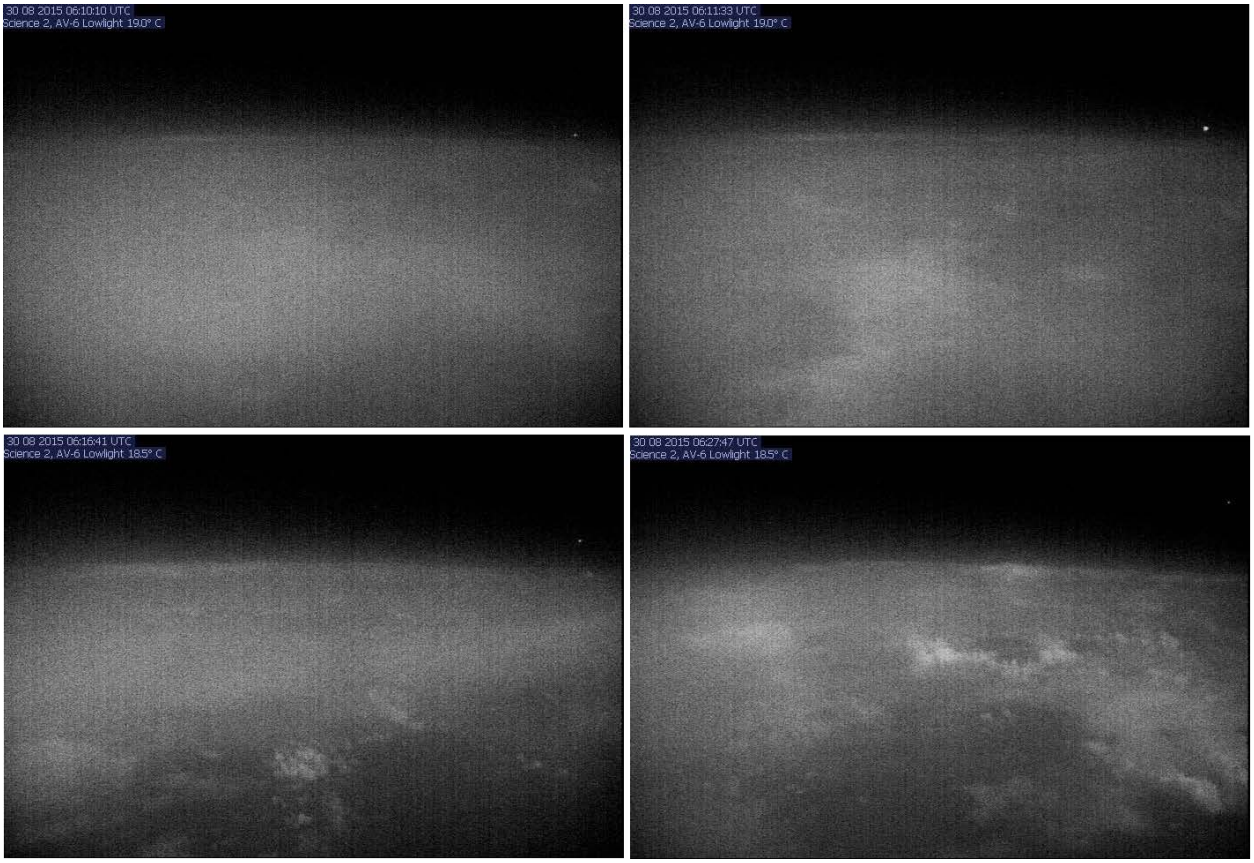
DROP 57 LOC 60 0406Z

DROP 58 LOC 61 0419Z



0530Z: GH makes a diversion from flight track to avoid significant convection on the transit to Wallops.

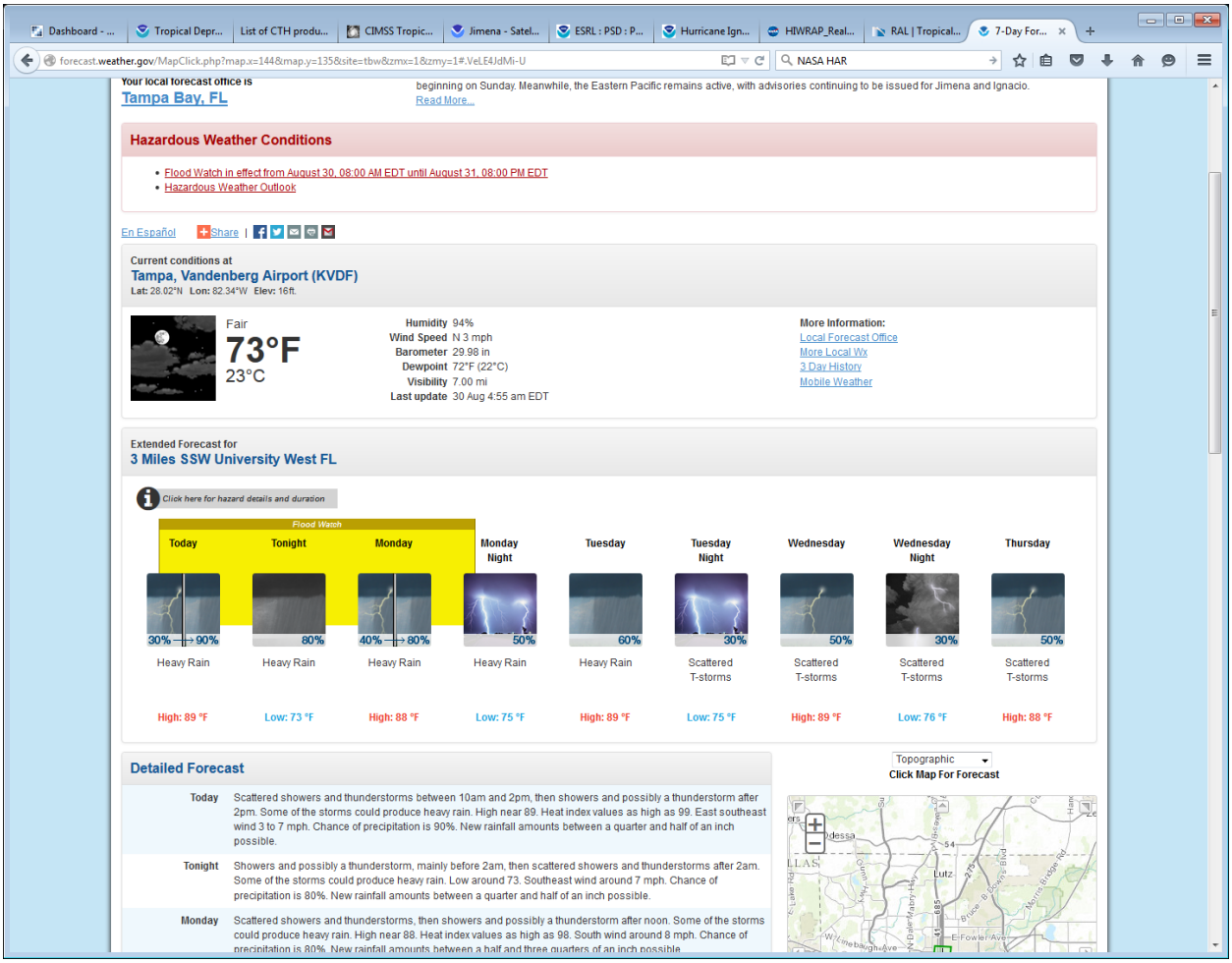
0553z: Overshooting tops (barely) detected by AV-6 LowLight camera to the northeast of Jacksonville, FL during homeward transit.



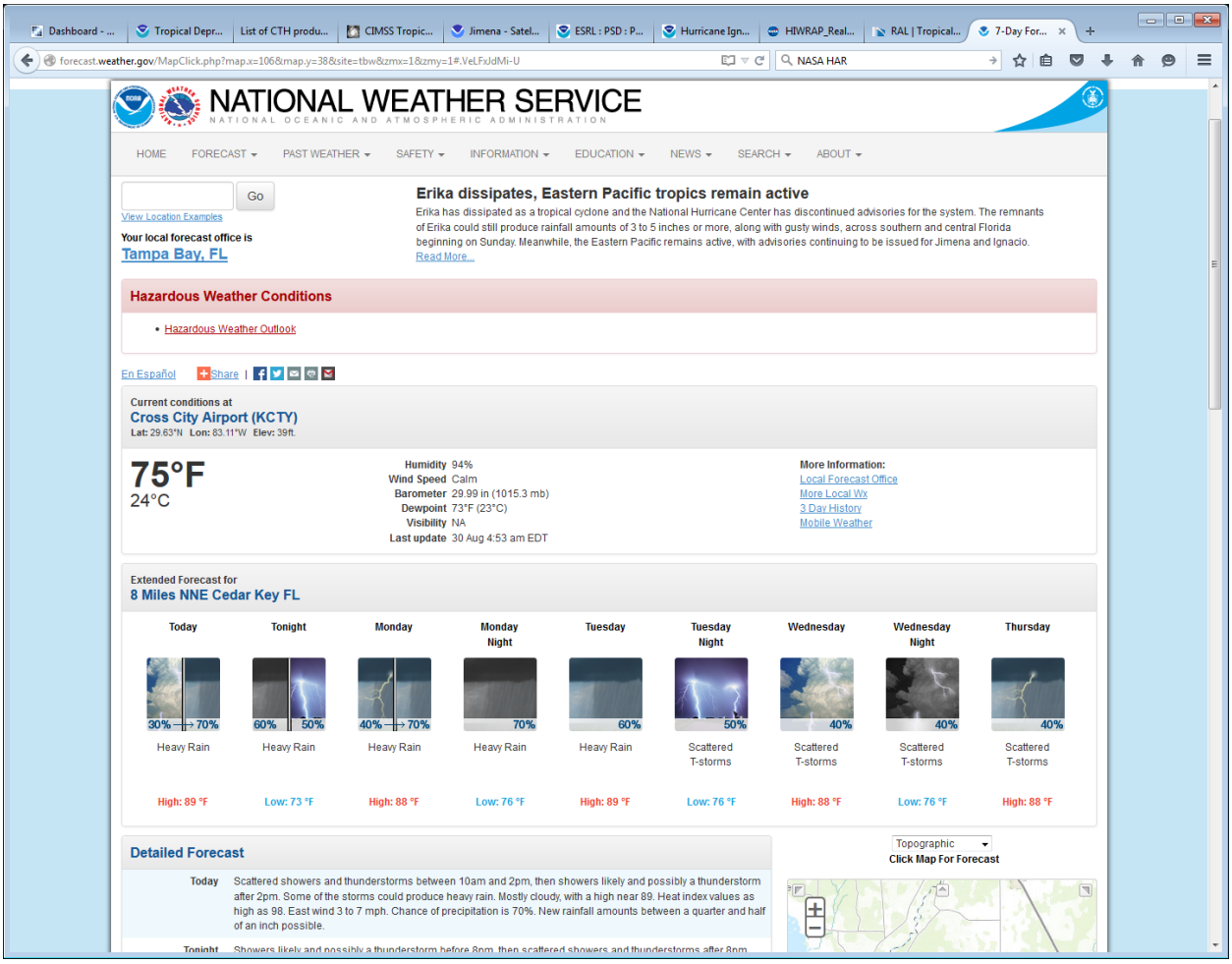
0627z: "Star-rise" over horizon (right side of each image), as visible from AV-6 LowLight camera.

0800 Z Clean up shift arrive - Paul Newman and Gary Wick

0855Z NWS Forecast for Tampa area (if relevant for sensitivity studies):



Below for further up the coast



AVAPS status report: 58 sondes released; no launcher problems, 1 fast fall. The average launcher temperature was 5-8 degrees warmer than in the previous flight with the added heating employed.

HAMSR: All good, no pressing maintenance concerns. Bjorn said processing got behind when Ku coverage was out over the Gulf, but will be catching up

HIWRAP: Vijay reports instrument performed very well. Just normal post-flight required

LIP: Issue with upward field mill on engine nacelle as noted previously

0937Z Beginning power down of payloads for descent
0943Z Beginning descent to 45000 ft

0950Z At 45k ft, turning instruments back on

1008Z Powering down for last phase

1015Z All off command

1045Z Landed

1045 Spent a lot of time orbiting offshore in W386. This time would have been better spent adding some tracks or sondes.